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The woman who challenged a Tudor queen

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SCAN TO GET OUR WEEKLY NEWSLETTER

Hypostyle hall from the Great Temple of Abu Simbel with statues of Ramesses II as Osiris

Welcome

Faith plays a very important role in many people's lives. Thanks to the predominance of monotheistic religions today, looking back on ancient cultures with their complex and wide-reaching pantheons of gods can feel quite alien. I like to place myself in the shoes (sandals, perhaps) of someone who lived on the Nile four and a half thousand years ago. The world beyond my borders is mysterious and unknowable, my fate year to year left to the chance of fair weather and political stability of which I have little exposure. That I might find some peace in believing all of these elements are controlled by fickle and mercurial deities begins to make some sense. That I might fear their wrath, even more understandable.

Suffice to say, I find this topic rather fascinating, so I am delighted to share with you the expert insight and analysis of Garry Shaw who will guide you through the nature of Egyptian belief and the stories they told of their gods. This issue you can also learn about the golden age of smuggling, discover how Bess of Hardwick became Elizabeth I's nemesis, and see what predictions from the past came true. Plus we welcome Selina Mills to discuss the history of blindness. An excellent interview that's well worth your time. As is the rest of the issue, of course, which I hope you enjoy.

Jonathan Gordon
Editor

ALL ABOUT HISTORY

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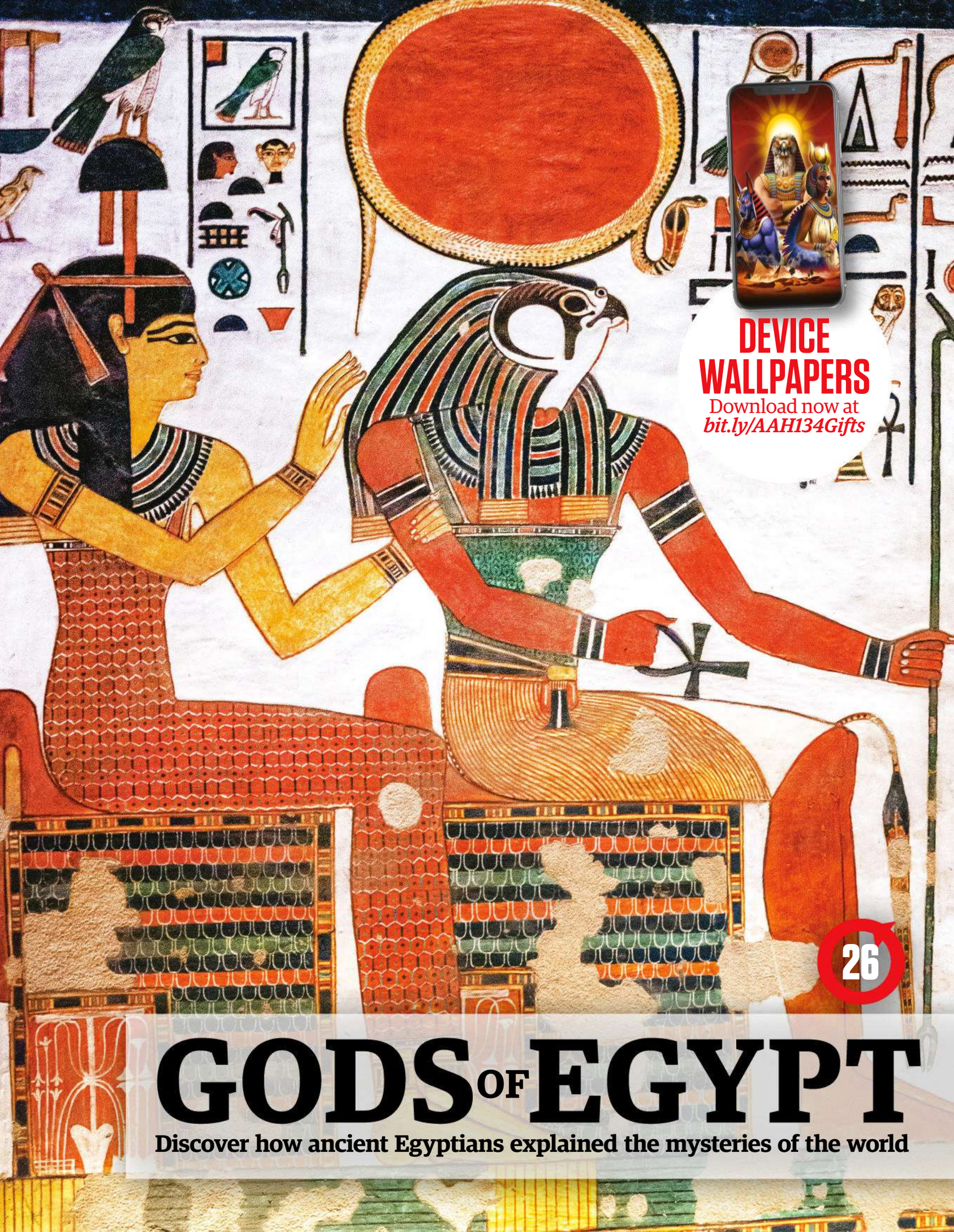

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GODS OF EGYPT

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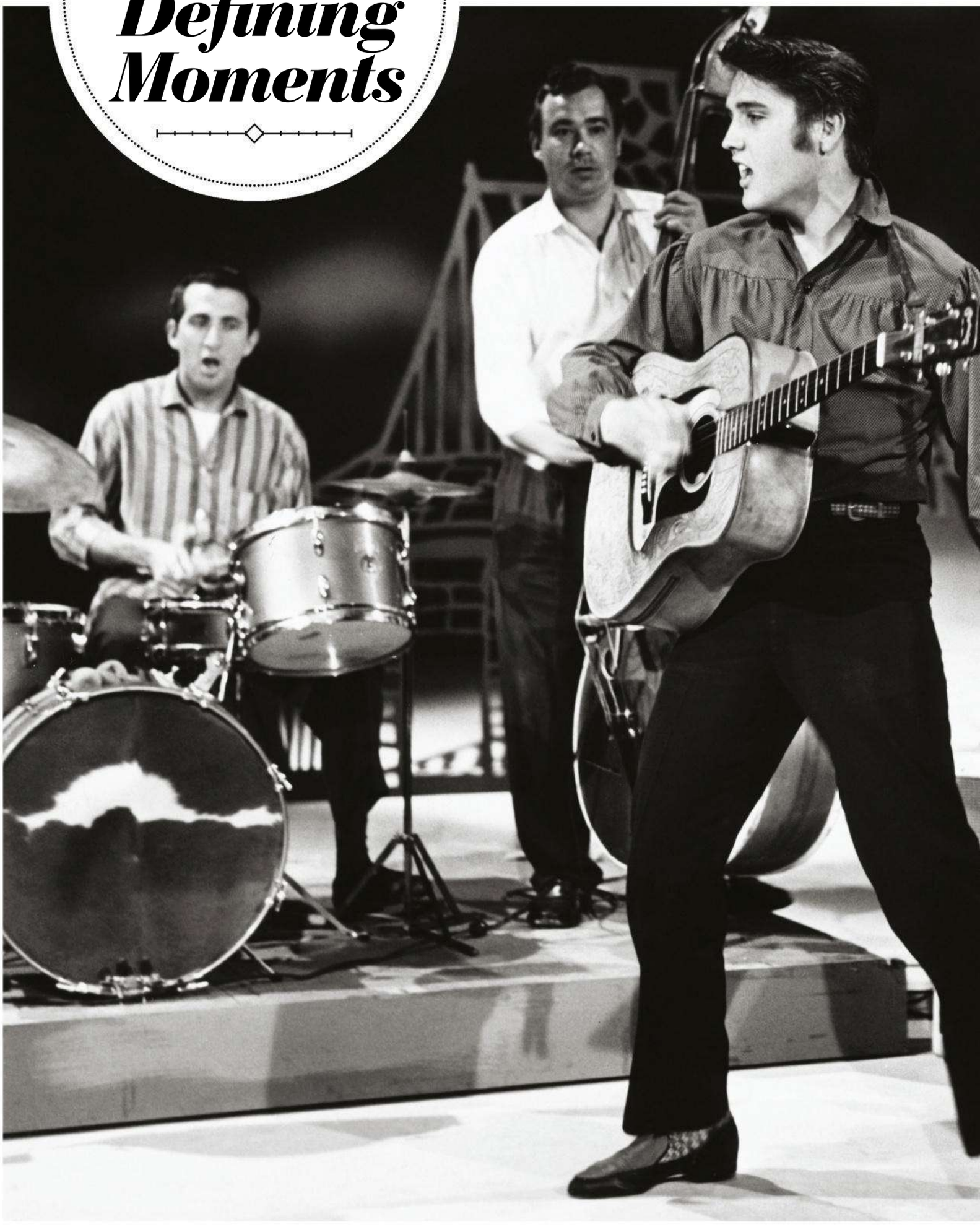
Defining Moments



9 September 1956

ELVIS ON TV

At the age of 21, Elvis Presley made his first appearance on America's popular variety TV programme *The Ed Sullivan Show*. 60 million viewers tuned in to watch his performance. Ed Sullivan had previously not wanted Presley on the show due to his risqué performances, but eventually signed him for three appearances after he had proved popular on other shows. In his third appearance on the show, Presley was only shown from the waist up in order to censor his famous gyrating hips.

© Alamy

22 September 1994

FRIENDS FIRST AIRED

One of the most successful and loved TV series of all time, *Friends* made its debut on NBC in September 1994. The sitcom followed the lives of six 20-somethings living in New York City and was created by David Crane and Marta Kauffman. Launching the careers of stars like Jennifer Aniston and Matt LeBlanc, the pilot episode was watched by around 22 million people. The show continued to run for ten series and became a global sensation. It has been credited with helping people from all over the world learn how to speak English.

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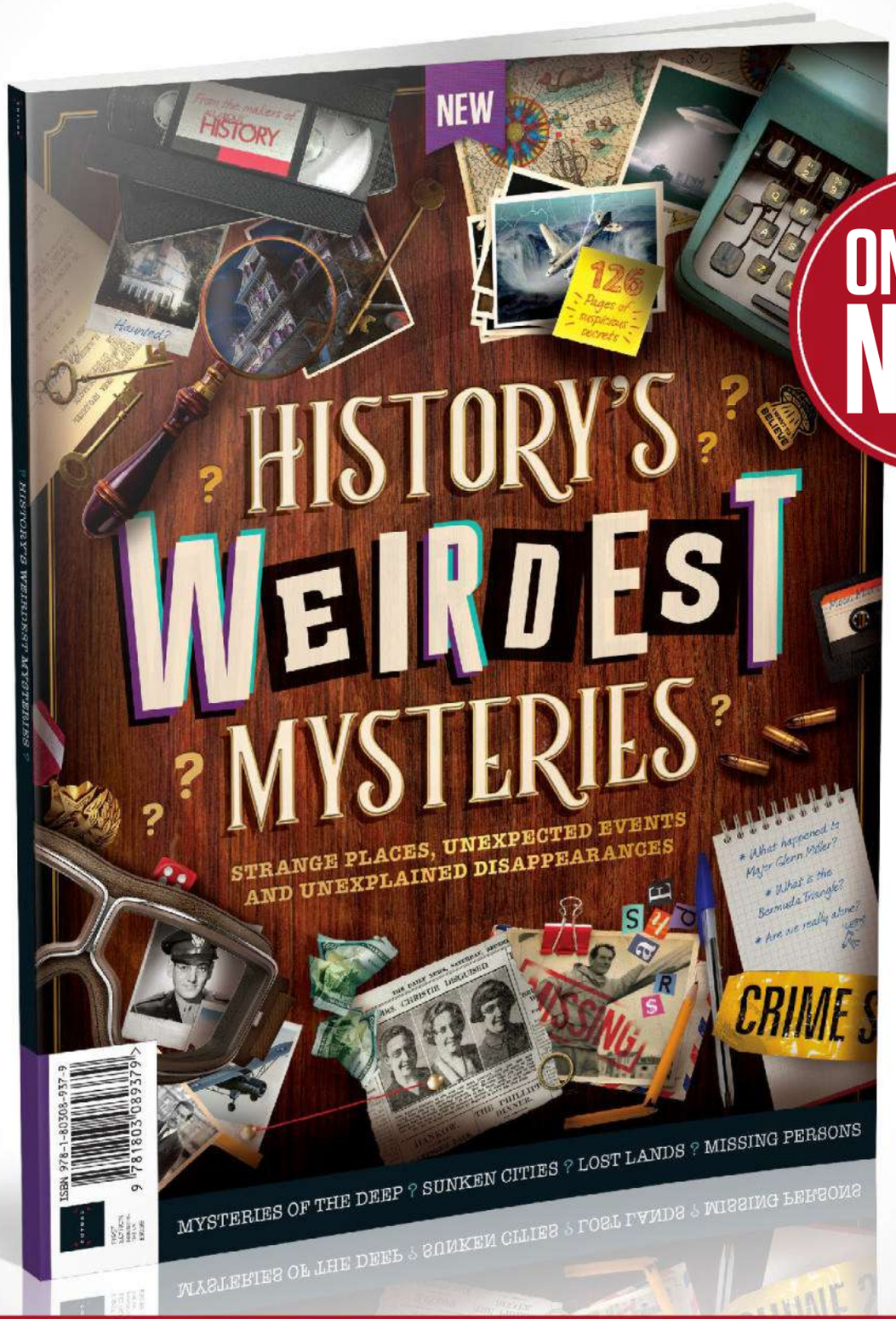
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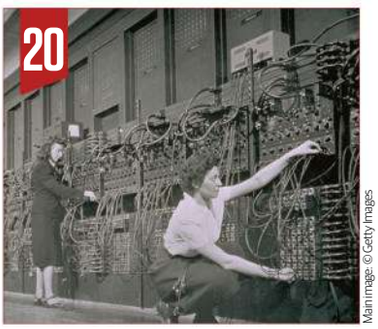

20 WOMEN IN COMPUTING

Main image: © Getty Images

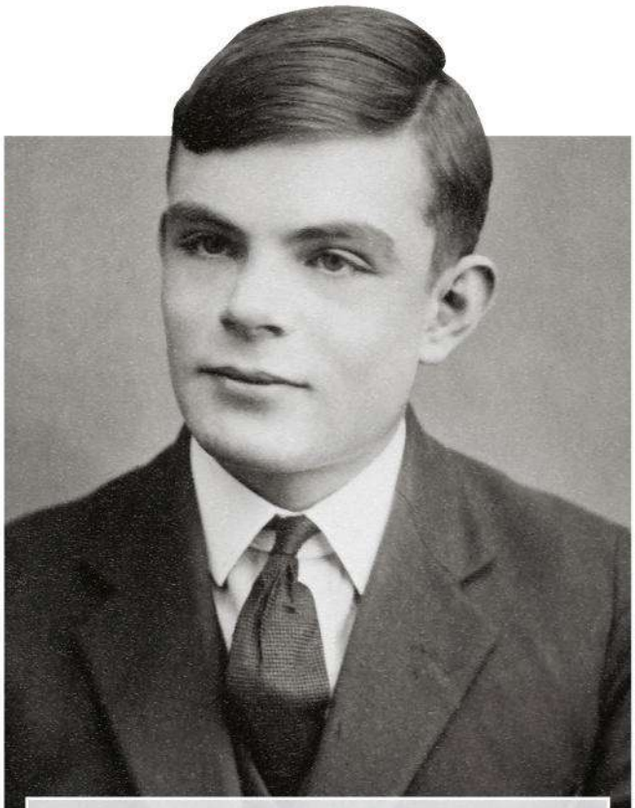
Written by Callum McKelvie, Jonathan Gordon, Jackson van Uden

Key Events

The storage capacity of the Analytical Engine was larger than any computer built before 1960.

1821 DIFFERENCE ENGINE

Frustrated by the inaccuracy of printed calculation tables used in mathematics, statistics and more, Charles Babbage conceives of a mechanical calculating engine that would be infallible. This develops into the bigger concept of a general purpose Analytical Engine in 1834. Neither is actually built in his time.



1936 THE TURING MACHINE

Alan Turing lays out his idea for a computing device capable of being programmed for any mathematical problem. The intention is to be able to tackle mathematics' most complex or undecidable problems. This hypothetical machine inspires the computing designs that follow.

THE ANTIKYTHERA MECHANISM c.100 BCE

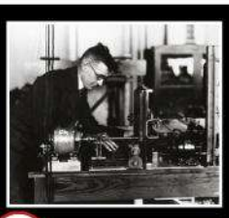
Designed to display details of astronomical phenomena through a series of gears, this ancient Greek device is thought to be the earliest known example of a basic 'computer'.

THE FIRST PROGRAM 1843

Translating a paper on Charles Babbage's work by Luigi Menabrea, Ada Lovelace includes extensive notes on how to program the Analytical Engine, writing the first computer program.

DIFFERENTIAL ANALYZER 1931

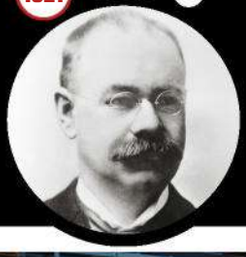
Electrical engineer Vannevar Bush and colleagues at the Massachusetts Institute of Technology (MIT) create a machine for solving differential equations called the Differential Analyzer.



A WORD IS BORN 1613

Author and poet Richard Braithwaite uses the word computer in his book *The Yong Mans Gleanings*. This is the first recorded use of the word, describing a mathematician.

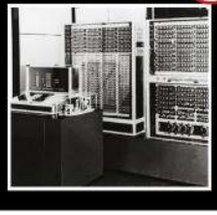
1821



SPEED AND EFFICIENCY 1890

With the previous census having taken seven years to collate, the US government turns to Herman Hollerith's electronic tabulator. He completes the tabulation before the end of the year, saving taxpayers $5 million.

1936



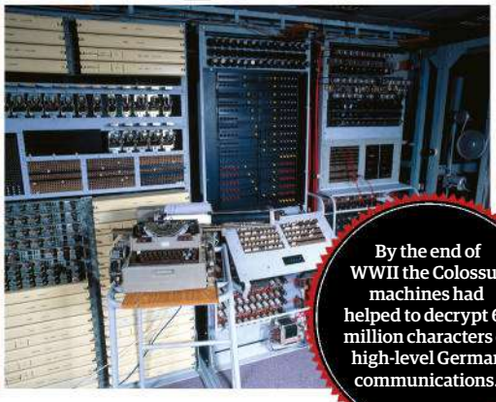
LOST TO WAR 1941

The first automatic computer, running on telephone relays and controlled by programs, is revealed in Berlin by Konrad Zuse. It is destroyed during Allied bombing in 1943.

1943

1943 THE COLOSSUS

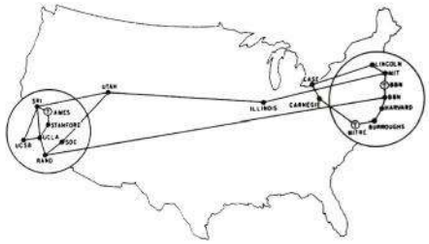
Considered to be the first semi-programmable digital computer in the world, the Mark I Colossus is delivered to Bletchley Park to assist in cracking the German Lorenz cipher. Unlike Enigma, Lorenz was used to encrypt much longer messages discussing longer-term plans and intentions.



By the end of WWII the Colossus machines had helped to decrypt 63 million characters of high-level German communications.

1969 NETWORKED COMMUNICATION

The Advanced Research Projects Agency Network (ARPANET) is developed by the US Department of Defence for cross-departmental collaboration and communication. Its cross-national network of computers is a precursor for the worldwide internet to come.



All images © Alamy, © Getty Images, © Shutterstock

1990 THE INTERNET

While working at the European Organization for Nuclear Research (CERN), British scientist Tim Berners-Lee develops the concept for an automated information-sharing system. Working with systems engineer Robert Cailliau, they lay out the basis for the World Wide Web, the beginning of the internet.

The original intent of Berners-Lee's work was to facilitate communication between scientific laboratories.

BUSINESS MACHINE 1954

The new IBM 650 Magnetic Drum Calculator is released for accounting and computation, becoming the most popular computer of the 1950s, selling around 2,000 units.

NEW INTERFACE 1968

American inventor Douglas Engelbart presents his prototype for a modern computer, featuring a mouse and graphical user interface, at the Fall Joint Computer Conference in San Francisco.

MICROSOFT BEGINS 1975

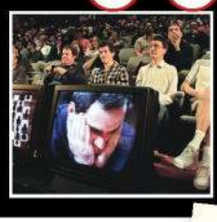
Childhood friends Paul Allen and Bill Gates begin translating BASIC for the kit computer Altair, and start their own company, Microsoft.

NEW LANGUAGE 1959

The COBOL (Common Business-Oriented Language) is developed by a team including Rear Admiral Grace Hopper, based on her own design, to create a common programming language for computers.

GAMING CONSOLE 1972

Ralph Baer releases the Magnavox Odyssey, the first home gaming console. The machine uses cartridges so that games can be swapped out and dial-based control devices.

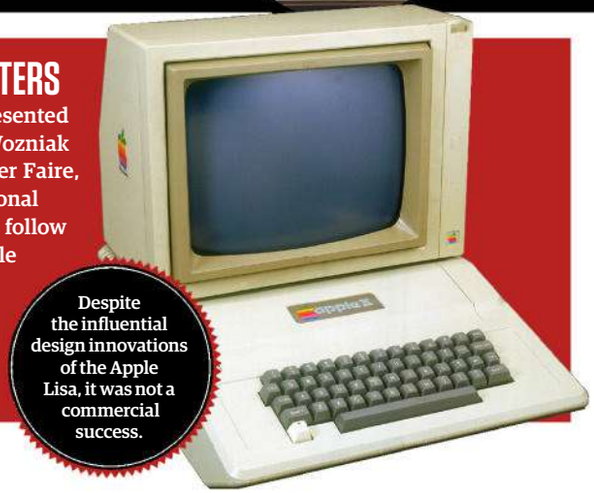


CHECKMATE 1997

IBM's Deep Blue computer defeats Russian grandmaster Garry Kasparov at chess in 37 moves. This is the first computer win against a world champion under tournament rules.

1977 APPLE COMPUTERS

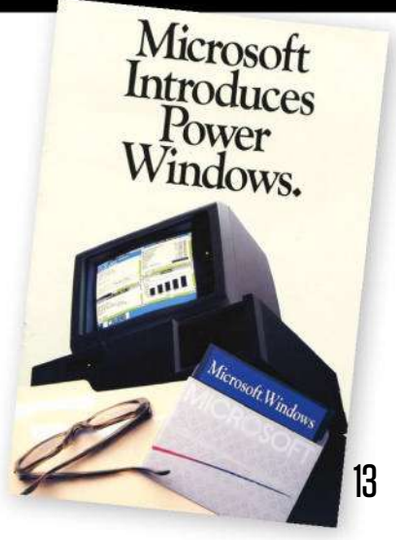
The Apple II is presented by Steve Jobs and Steve Wozniak at the West Coast Computer Faire, beginning a boom in personal computer (PC) sales. They follow it up in 1983 with the Apple Lisa, one of the first PCs to have a graphical user interface (GUI), including features like drop-down menus and icons.



Despite the influential design innovations of the Apple Lisa, it was not a commercial success.

1985 OPENING WINDOWS

The first GUI from Microsoft is built on top of MS-DOS, the computer interface that Microsoft had pioneered for personal computers. It makes specific use of mouse controls, which is still not a universal feature of PCs at the time, and features a game called *Reversi*.



NASA PROJECT GEMINI COMPUTER ROOM

Goddard, Washington 1965-1966

Following Project Mercury, Project Gemini was NASA's second series of manned spaceflight missions and took place between 1965 and 1966. They bridged the gap between the Mercury missions and the more technically elaborate Apollo moon missions.

The goals for the Gemini missions were more complex than their predecessors. One was to attempt the first rendezvous between two spacecraft. Another was to create a capsule that could change the orbit it was in as, previously, the Mercury capsules could only change direction and not the orbits themselves. As a result, Gemini would be the first mission to use onboard flight computers with ground computers needed to update these. According to NASA's History Division, the computing power required for Project Gemini resulted in "one of the largest computer programs in history."

Previously, for the Mercury project NASA had used a number of IBM 7090 computers, but for Gemini something more powerful was needed. IBM introduced the 7094 in 1962, making several improvements upon the earlier 7090. For the time, the 7094 was exceptionally powerful and, according to IBM, could complete 500,000 logical decisions, 250,000 additions, 100,000 multiplications or 62,500 divisions all in a single second. The NASA computer system for the Gemini missions was not housed at the Kennedy Space Center but instead at the Space Flight Center at Goddard just outside Washington.

According to Paul E Ceruzzi in his work, *A History Of Modern Computing*: "It is regarded as the classic mainframe because of its combination of architecture, performance and financial success: hundreds of machines were installed at a price of around $2 million each." The 7094 was not just used by NASA for space flight operations but also by the US Air Force in missile defence. A 7090 is shown serving in a similar capacity in Stanley Kubrick's 1964 film, *Dr Strangelove*.

MISSILE DEFENCE

NASA was not the only government agency to see the potential of the 7094 and they were also used by the United States Air Force for missile defence. According to *FedTech* magazine, these replaced the earlier 7090 models and were used as part of the Ballistic Missile Early Warning System. Created during the ongoing tensions of the Cold War, it was designed to detect enemy missiles. They remained part of the Early Warning System until the 1980s.

REEL TO REEL TAPE MACHINE

Previously computer data would be stored on punch cards that were then inputted into the machine. Later paper tape was used, but during the 1960s magnetic tapes quickly replaced both these methods. The tapes allowed for far more data storage and they were easier to handle and store than punch cards.

CLIMATE CONTROL

The installation at Goddard would have had its own air conditioning system, keeping the 7094 cool. According to historian Paul E Ceruzzi, to allow greater air circulation, the machines would also be raised off the floor. This provided handy space for the huge masses of cables to be kept out of the way. He also states that the installations were highly secure, as it was the machines themselves rather than the software that could be subject to sabotage or theft.

DATA CHANNEL AND CONTROLLER

The data channels of the 7094 were described by the United States National Information Center as small-purpose computers and allowed direct interface with the core processor. The controller allowed a human operator to interact with the data channel, although some sources state that these devices were not used that often.

COST EFFECTIVE

According to NASA's History Division, due to the excessive costs of the Gemini project, NASA informed potential bidders that they must only use ready-made equipment. IBM suggested three of their 7094 machines, which had been released in 1962: one would run mission control software, the other simulate it, and the third would run simulation software purely to test the prior two. Unfortunately, three machines were not sufficient and two more were added.

LARGE CORE STORAGE

According to one of NASA's own histories of the Gemini space programme, IBM were aware of the immense requirements of the 7094 and quickly realised that the usual amount of memory would not be sufficient. As such, they added Large Core Storage banks that allowed tapes to be loaded and then transferred to the primary core as and when they were required.

SURPLUS TO REQUIREMENTS

According to NASA's History Division, as preparations for the Apollo moon missions began, the 7094 was quickly deemed to lack the required computing power. As such the more powerful IBM 360 was introduced instead, having been designed primarily as a competitor for CDC's 6600. However, one 7094 remained in operation as it was required to run flight planning software that had not been placed onto the new machines.

IBM 711

The punched card reader was used to transfer the information from punch cards onto the IBM computer itself. According to IBM's own archive site, the device contained two brushes that 'read' the holes on the cards and inputted this information into the computer. Although it was withdrawn in 1956, the 7090 and 7094 still used this model of reader. However, punched cards were mostly used only for the initial loading of software as magnetic tape was faster.

I'M SORRY DAVE, I'M AFRAID I CAN'T DO THAT

Stanley Kubrick's connection to IBM's 7090 and 7094 computers does not end with *Dr Strangelove*. In fact, the most terrifying AI ever put to screen was inspired by a 7094 computer. When visiting a friend, the renowned science fiction author Arthur C Clarke was shown a tape of an IBM 7094 singing *Daisy Bell*. This inspired the malevolent computer HAL in his novel *2001: A Space Odyssey*, which was adapted by Kubrick into the film of the same name.

PUNCH CARDS

Punch cards were paper cards with a series of holes in them. The holes represented either information to be inputted into the computer or instructions for various tasks. The punch card reader would read the series of holes and convert this into information to input into the computer.

Illustration by Adrian Mann

BLETCHLEY PARK CODE BREAKER

United Kingdom 1943-1945

WHAT WAS COLOSSUS?

The Colossus was created to crack the Lorenz code. This remarkable machine was also the world's first electrical computer. It was the creation of Thomas Flowers who then supervised the construction of the second, superior model, the Colossus Mark II – shown here. The Lorenz code was important as it was used by Hitler to communicate with his generals.

WREN

According to Bletchley Park, 75 per cent of its staff were women, with six out of ten being in uniform. The majority of the uniformed codebreakers were in the Women's Royal Naval Service, known as Wrens. Few of the female codebreakers were older than 24 and six worked on the Colossus computer.

TOP SECRET

Due to the highly secretive nature of the Bletchley Park codebreaking operations, the Colossus nearly missed out on its title of the first electronic computer. Built in 1945, ENIAC was often considered the first. Eventually all information regarding Colossus was declassified in 2003.

VACUUM TUBES

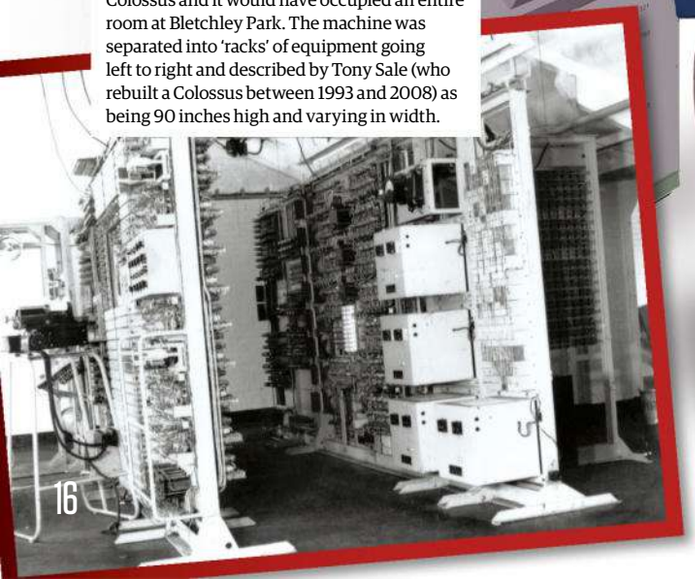
The invention of the transistor in 1947 revolutionised not only the electronics industry but also developing computers. Prior to this, machines such as the Colossus used vacuum tubes. Developed by John Ambrose Fleming in 1904, they were glass tubes that allowed for controlled electron flow. Also known as valves, there were some 1,700 tubes in each Colossus machine.

THE BEDSTEAD

This device read paper tape that was used to input data into the machine, and was constructed out of a metal frame on which a series of tape pulleys were then placed. According to the Crypto Museum, the tape could be read at the speed of 5,000 characters per second. The wheels were important because the tape tension had to be controlled, in case it ripped apart.

A TRUE 'COLOSSUS'

Shown here is just a small portion of the Colossus and it would have occupied an entire room at Bletchley Park. The machine was separated into 'racks' of equipment going left to right and described by Tony Sale (who rebuilt a Colossus between 1993 and 2008) as being 90 inches high and varying in width.



D-DAY

One of the key victories scored by the Colossus machine was in providing the knowledge to the Allies that deception operations, suggesting the D-Day landings would occur at Calais rather than Normandy, had worked. The messages deciphered by Colossus revealed a complete lack of preparedness by the Germany army for an Allied invasion.

Illustration by Kevin McGivern
Inset: © Getty Images

Historical Treasures

KENBAK-1

Widely considered to be the world's first personal computer! USA, 1971

Designed and built in 1971 by John Blankenbaker in his garage, the Kenbak-1 is considered to be the world's first personal computer. Blankenbaker only ever built 50 Kenbak-1s, of which only 14 are known today. The Kenbak-1 was created and marketed as a fun personal computer for people to learn about computer concepts and how to program machine code. It had eight input switches with eight output lights and was reportedly easy to program due to the rich and easy-to-follow instructions that were included with the computer.

The Kenbak-1 was designed and built before the first microprocessors, so it used a system of 131 small-scale integration (SSI) logic chips instead. Inside the Kenbak-1 there was also a state machine that initiated internal steps of loading and executing, which controlled 29 states, as well as an Arithmetic Unit and Serial Adder that helped process answers. All of this amounted to the Kenbak-1 being able to execute 480 instructions per second. The Kenbak-1 also had 256 bytes of memory, a far cry from the hundreds of gigabytes we carry in our pockets today, but a difficult feat in the 1970s. Having this much memory was achieved by using two Intel 1024-bit-shift registers, and it operated at a speed of one megahertz (MHz).

Due to it being designed as a fun education tool, the Kenbak-1 was sold mainly to schools and colleges, with the first two being sold to a private girls' school in Hawaii. However, the Kenbak-1 was expensive, it cost $750 ($5,500 in 2022) which turned off potential private buyers, and despite Blankenbaker marketing the computer well, many schools decided to continue using terminal time-shares to teach computer languages. In 1973, after slowing sales and realising he had chosen the wrong marketing strategy, Blankenbaker eventually closed Kenbak Corporation down and sold everything to CTI Educational. CTI then upped the price to $1,035 and rebranded the Kenbak-1 as the CTI Model 5050 Trainer, and after struggling to make sales CTI went bankrupt leaving the Kenbak-1 to the annals of computing history.

LIGHTS

The lights on the left would light up as numbers were inputted into the code, and the lights on the right indicated that a command had been inputted.

BINARY CODE

The white buttons on the left were for adding binary code, or numbers. You would have to add the numbers together on the white buttons to get the number that you wanted for a program.

CONTROL BUTTONS

The buttons on the right were used to control the Kenbak-1, committing code to memory, clearing the memory, and starting programs. The switch at the far end of the panel turned it on and off.

TENS AND HUNDREDS

The black buttons on the far left of the Kenbak-1 were used to add tens and hundreds to the numbers you were inputting on the white buttons. The maximum number you could program was 377.

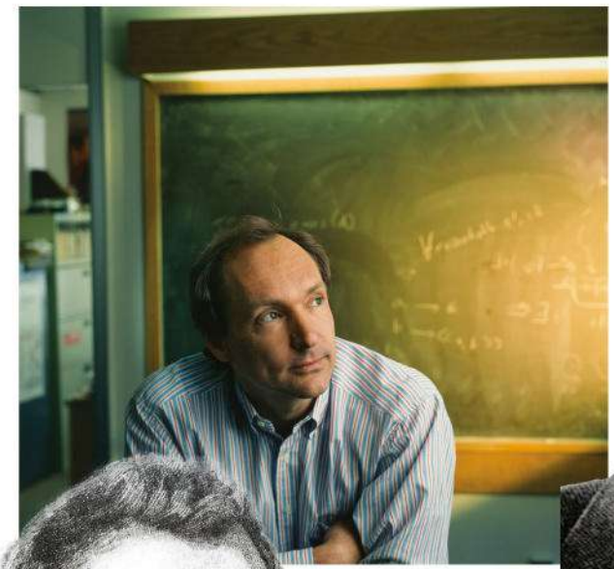
© Getty Images

PIONEERS OF COMPUTING

The men and women whose invention and innovation helped to shape the modern world

TIM BERNERS-LEE
ENGLISH, 1955 – PRESENT

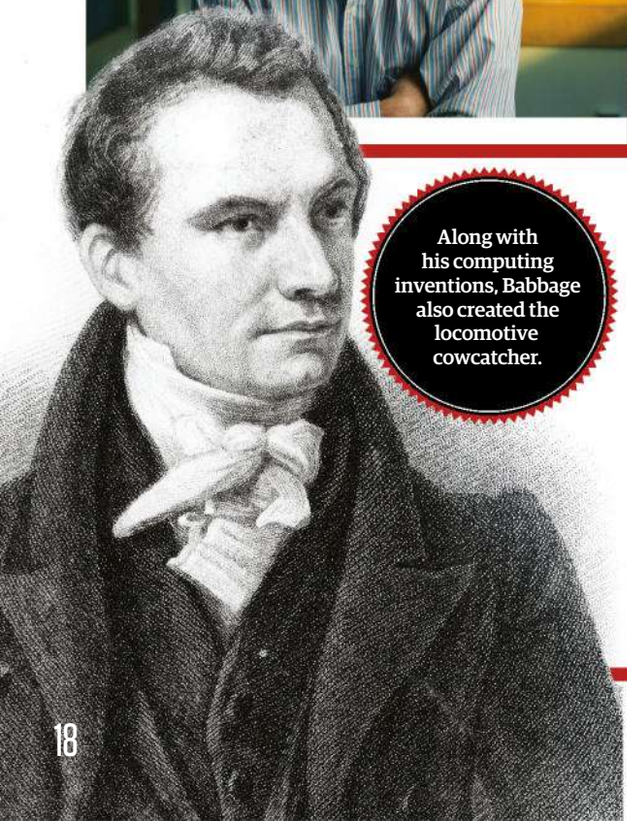
Born to parents already working in computing, Berners-Lee took to the industry quickly, writing software after graduating university in 1976 before joining CERN as a software engineering consultant in 1980. While there he developed hypertext for containing links between files he was working on. Returning to CERN in 1984 he developed the concept of a global hypertext document system using HyperText Markup Language (HTML) and a Uniform Resource Locator (URL), the building blocks of the web.



Alan Turing
English, 1912 – 1954

A number of important milestones in computing can be attributed to Alan Turing. While war records had been kept secret for some time, he is now best remembered for his contribution to the Bletchley Park code-breaking efforts during WWII. His mathematical insight helped to design the cipher machines needed to break the German encryption of classified intelligence. Prior to this, Turing had conceived of the Turing machine, a theoretical computer, which he later developed into the Automatic Computing Engine from 1945. The design was deemed too complex to attempt, but lit the way for future innovations.

Turing also worked on the concept of artificial intelligence, developing the Turing Test to judge a machine's abilities.



Charles Babbage
English, 1791 – 1871

Along with his computing inventions, Babbage also created the locomotive cowcatcher.

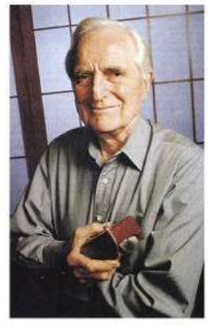
A mathematical visionary, Babbage was self-taught in algebra and influenced by the mathematics being discussed on the continent. Following university he became a fellow of the Royal Society in 1816 and helped found the Astronomical Society in 1820, from which his interest in mechanical calculation began. He invented the Difference Engine for making mathematical tables in 1821 and then the Analytical Engine for more complex mathematical equations, storing up to 1,000 50-digit numbers. Technology of the time couldn't build a lasting Difference Engine and the Analytical Engine wasn't completed, but they set the template for computer technology to come.

KONRAD ZUSE
GERMAN, 1910 – 1995

If not for having developed his ideas in Germany during WWII, Zuse might well have been a much more famous name in the world today. He developed the Z3 in 1941, the first functional program-controlled computer. However, it wasn't widely adopted and was destroyed in a bombing raid in 1943. Zuse founded his own computer business and built the Z4, beaten to market only by the UNIVAC I in 1951 as a commercial computer.

DOUGLAS ENGELBART
AMERICAN, 1925 – 2013

Two of the most important innovations for how we use computers today are the graphical user interface (GUI) and mouse used to interact with it, and we have Engelbart, in part, to thank for both. In 1963 he received partial funding for his research into computer interfaces and in 1968 he presented a collaborative computer system using mouse and keyboard. The presentation of the work of the Stanford Research Institute (SRI) also included editing shared documents. It became known as 'the mother of all demos'.



ADELE GOLDBERG

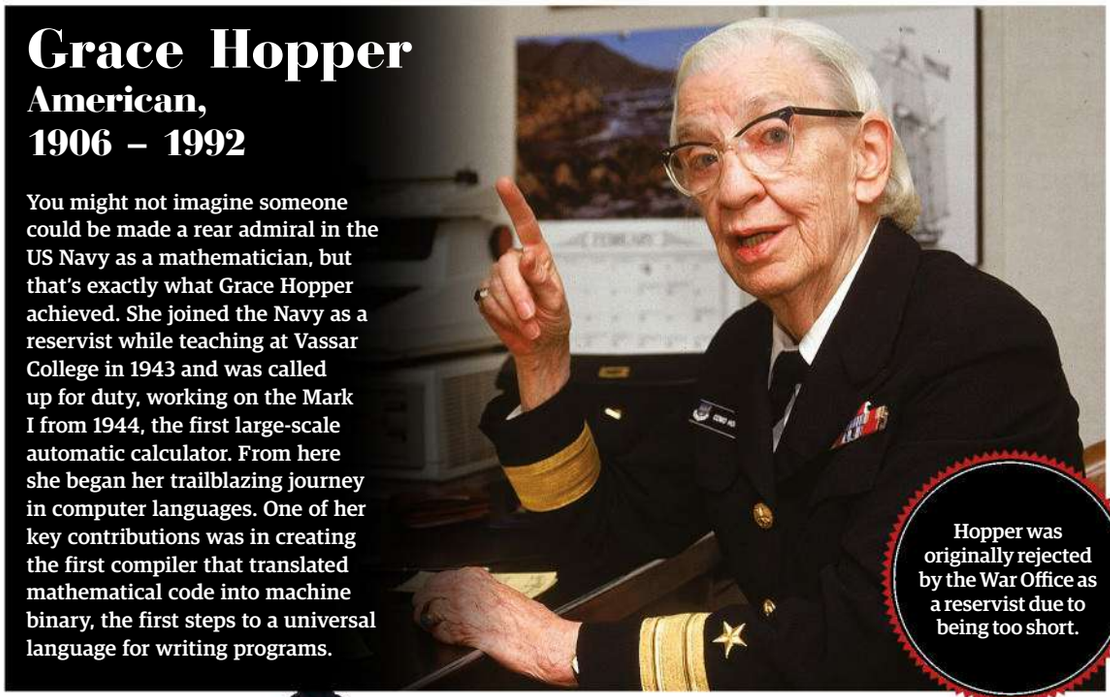
AMERICAN, 1945 – PRESENT

Helping to further advance the way we interact with computers, Goldberg's work with Xerox PARC (Palo Alto Research Center) resulted in Smalltalk-80, which led to a graphical user interface (GUI) that included many things we take for granted today. This included windows, icons, menus and a pointer for selecting them. Smalltalk-80 was demonstrated to Steve Jobs in 1979 and is believed to have inspired the user interface later Apple computers employed.

Grace Hopper

American, 1906 – 1992

You might not imagine someone could be made a rear admiral in the US Navy as a mathematician, but that's exactly what Grace Hopper achieved. She joined the Navy as a reservist while teaching at Vassar College in 1943 and was called up for duty, working on the Mark I from 1944, the first large-scale automatic calculator. From here she began her trailblazing journey in computer languages. One of her key contributions was in creating the first compiler that translated mathematical code into machine binary, the first steps to a universal language for writing programs.

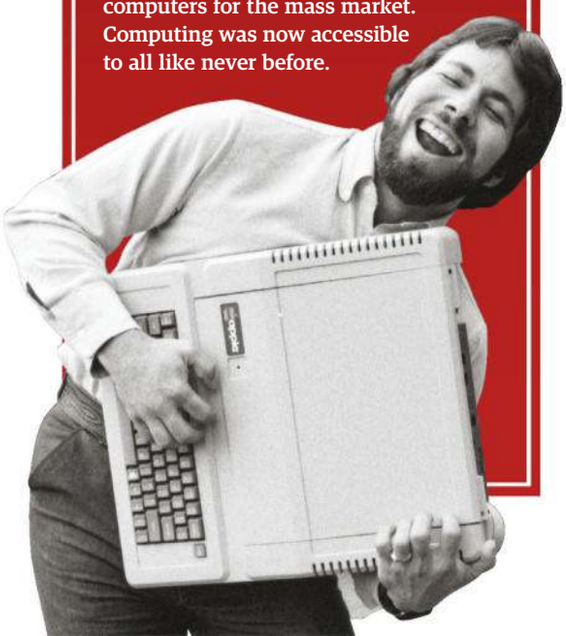


Hopper was originally rejected by the War Office as a reservist due to being too short.

Steve Wozniak

American, 1950 – Present

Known affectionately around the world by tech aficionados as 'Woz', Steve Wozniak was the co-founder of Apple Computer with Steve Jobs in 1976. The pair had been members of a homebrew computer club and having had his design for a new microcomputer rejected by his employer Hewlett-Packard, Wozniak teamed up with Jobs to sell it themselves as a kit computer. It was so successful that they subsequently designed the Apple II, released in 1977, which became one of the very first successful personal computers for the mass market. Computing was now accessible to all like never before.



Since 2009, the second Tuesday in October is Ada Lovelace Day, celebrating women in STEM.

Ada Lovelace

English, 1815 – 1852

"The Analytical Engine weaves algebraic patterns just as the Jacquard loom weaves flowers and leaves," wrote Lovelace in 1843. She met Babbage in 1833 and came to translate a paper on his Analytical Engine by Italian engineer Luigi Menabrea in which she praised his creation. It was in the notes to this translation that Lovelace wrote the first ever example of a program for such a device, making it the first computer program ever written. But, as her quote above suggests, she saw the broader creative possibilities of such technology as well as how it would be limited by our own knowledge.

JOHN VINCENT ATANASOFF

AMERICAN, 1903 – 1995

In 1973, Atanasoff saw his Atanasoff-Berry Computer, developed between 1937 and 1942 with his graduate student Clifford Berry, successfully recognised in court as the first electronic digital computer. Atanasoff's work had begun when he found current analog machines for calculation too limited for his differential equation work. The device he created could hold data through capacitors and used logic circuits for performing basic functions.

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Q&A

WOMEN IN COMPUTING

From Ada Lovelace to the codebreakers of WWII, John Croucher discusses the role of women in computing

What are some of the earliest examples of women in computing? Have they been there since the beginning?

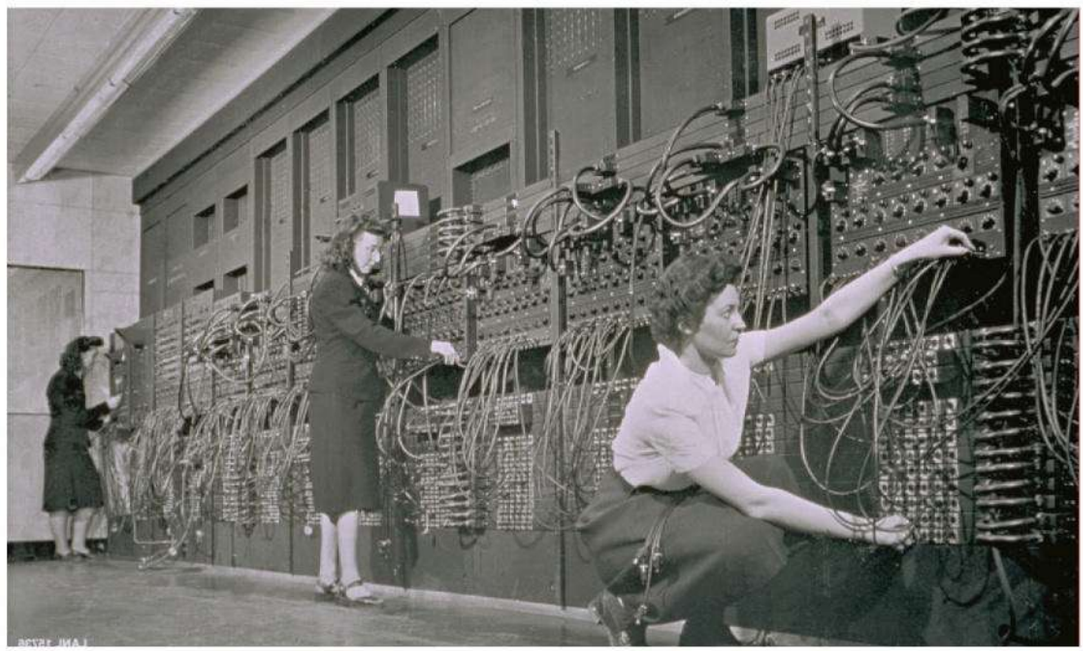
Even in what might be viewed as the beginnings of computing, women are involved. One of the earliest was Nicole-Reine Étable de la Brière (1723-1788), born in France, an expert in astronomy and advanced mathematics. For her amazing achievements, the asteroid 7720 Lepaute and the lunar crater Lepaute are named in her honour. Ada Lovelace (1815-1852) was the first person to see the enormous potential of Charles Babbage's device, sensing that his Analytical Engine had the capacity to be programmed rather than simply perform basic operations. Her name is honoured in the Lovelace Medal, awarded since 1998 by the British Computer Society, and since 2008 in an annual competition for women students. Ada Lovelace is now widely regarded as being the world's first computer programmer and her method as the first computer program.

John Croucher is a Professor of Actuarial Studies and Business Analytics at Macquarie Business School, Sydney. His books include *Mistress Of Science: The Story Of The Remarkable Janet Taylor, Pioneer Of Sea Navigation* (2016) and *Women Of Science: 100 Inspirational Lives* (2018).

Why, historically, was computing a field open to women as opposed to other fields of science?

During World War II, women comprised the vast majority of computer programmers in the US and UK. The war opened up the field for a number of women, including those termed 'human computers', doing manual calculations of things such as firing tables for guns and ballistic missile trajectories. This was typified by the amazing code-breakers at Bletchley Park, a British government cryptological establishment. Two of those involved were Mavis Batey and Ann Mitchell.

The ENIAC was the first all-electronic programmable computer, and in 1945 six outstanding women – Jean Bartik, Marlyn Meltzer, Ruth Teitelbaum, Betty Holberton, Frances Spence, and Kay Antonelli – revolutionised computer programming. Their efforts helped lead the world into the computer age in the



Headshot photo courtesy of: John Croucher

ABOVE
Computer scientist Joy Buolamwini researches the social implications of AI technology

1970s and early 1980s and, in the mid-80s, about 40 per cent of computer science graduates were women.

In *IT Girls* you show that historically computing could be an incredibly diverse field. How important is diversity to computing history?

In the evolution of computing diversity is very important. These pioneering women come from many different countries and a variety of backgrounds. One example is the Austro-Hungarian actress Hedy Lamarr, who was not only renowned for her contributions to the motion picture industry, but was posthumously inducted into the National Inventors Hall of Fame, for her pioneering work in the field of wireless technology.

Kateryna Yushchenko became the first woman in the USSR to become a Doctor of Physical and Mathematical Sciences in programming and, in 1965, Catholic Sister Mary Keller was the first woman in the US to be awarded a PhD in computer science. Ghanaian-American-Canadian Joy Buolamwini has conducted outstanding research into AI inaccuracies in face recognition while Israeli-American Shafi Goldwasser won the equivalent of a Nobel in the computing world, the AM Turing Award from the Association for Computing Machinery.

Trans woman Lynn Conway was a key architect of the US Defense Department's Strategic Computing Initiative, a research program studying high-performance computing, autonomous systems technology, and intelligent weapons technology. Conway's other contributions to the development of computing included the invention of dimensionless, scalable design rules that greatly simplified chip design and design tools.

Are there any women featured in the book whose stories you find particularly inspiring?

Among the many outstanding women who could be singled out, there are several who come to mind. One is Erna Hoover whose revolutionary switching system was the first reliable device to use a computer, including transistor circuits and memory-stored control. She reportedly developed the initial design while she was in hospital around the birth of her second child.

Other inspiring women include Mary Lou Jepsen, who founded Openwater, a startup company that explored MRI-type body imaging using holographic and infrared techniques. Another is the consultant engineer Radia Perlman, who developed a child-friendly version of the educational robotics language LOGO that she named TORTIS (Toddler's Own Recursive Turtle Interpreter System).

She also devised a network protocol so that bridges within the LAN communicated with one another, the algorithm allowing the bridges to designate one root bridge in the network. The protocol was standardised as 802.1d by the Institute of Electrical and Electronics Engineers (IEEE).

The extraordinary Grace Hopper became one of the first programmers in computing history, believing that programming languages should be as easily understood as English. Consequently, she was highly influential on the development of one of the first programming languages, COBOL (COmmon Business-Oriented Language), which became one of the most widespread languages in business.

***IT Girls: Pioneer Women In Computing* is a comprehensive guide to many of these figures. What led you to write it?**

In 2016, I published, along with my wife Rosalind, a biography of one of my ancestors, Janet Taylor, who lived during the 19th century. It was called *Mistress Of Science: The Story Of The Remarkable Janet Taylor*. The publisher, Amberley in the UK, then asked me to write a book with the brief biographies of 100 women who had contributed to important scientific discoveries. This volume, *Women Of Science: 100 Inspirational Lives*, was published in 2018, and was so successful that I was then asked by the same publisher to author a similar book, this time named *IT Girls*. These three works highlight the outstanding achievements of women in all branches of science and computing, spanning several centuries and multiple countries.

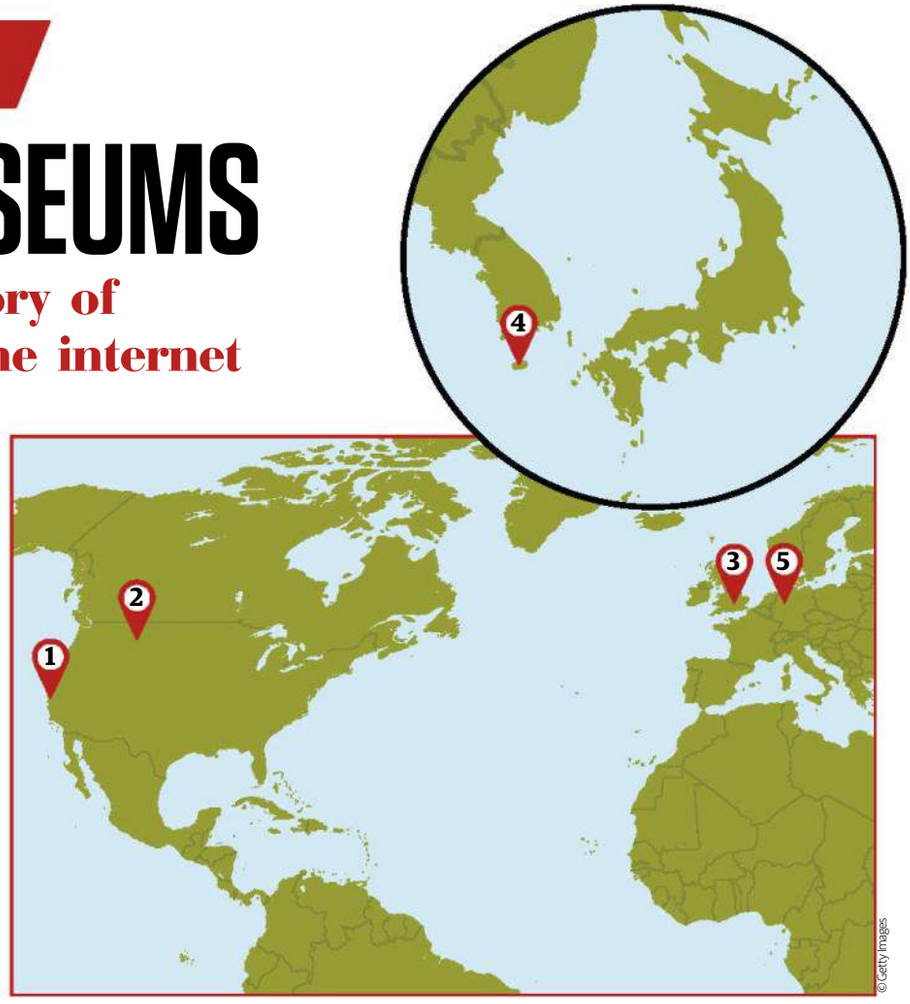
FAR-LEFT
French astronomer and mathematician Nicole-Reine Lepaute

LEFT
Computer operators programming the groundbreaking ENIAC

All images © Alamy, © Getty Images

COMPUTER MUSEUMS

Delve deeper into the history of calculation, robotics and the internet



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1 COMPUTER HISTORY MUSEUM
MOUNTAIN VIEW, CALIFORNIA, USA

What came to be known as Silicon Valley in Northern California was one of the places where the computer revolution first took root, and now that journey is chronicled in the Computer History Museum. Located just northwest of central San Jose, the museum charts the earliest incarnations and development of the computer right up to the modern age with the latest innovations demonstrated. Here you'll find examples of early technology, code books, business plans and various home computers from over the decades. They also chronicle the history of Silicon Valley itself and why so many businesses flocked to Northern California.

The CHM features interactive exhibitions and insight that should make it accessible to people of all ages, but it also functions as a location for important talks and demonstrations for industry luminaries. If you have an interest in both the past and future of computing, this museum right in the heart of the industry is an excellent place to visit.

Open Weds to Sun, 10am to 5pm. $19.50 general admission.

Exhibits include classic examples of technology

The Computer History Museum is located right in the heart of Silicon Valley

2 AMERICAN COMPUTER & ROBOTICS MUSEUM
BOZEMAN, MONTANA, USA

One of the permanent exhibitions from the museum

While it may not have the square footage of other museums around the world, the American Computer & Robotics museum can boast a number of impressive qualifications that make it the equal of many. For a start, it's been operating continuously since 1990, which actually makes it the longest running computer museum in the world. It also has exhibits that chart 4,000 years of human history, from cuneiform tablets all the way up to quantum computers and artificial intelligence. Founded by George Keremedjiev who started collecting artefacts and wanted a location to share them, the modern museum features examples of old technology, but also plenty of sci-fi items as well.

As it happens, only about six per cent of the overall collection is believed to be on display at any given time as the museum keeps an extensive archive of technology for preservation purposes. Some key highlights include a replica of the Gutenberg printing press and an Apollo 1 computer. They also include exhibits celebrating important people in the history of computing. This relatively unassuming little museum near Montana State University has even been called "Inch for inch, the best museum in the world" by a Harvard scientist.

Open Tuesday to Sunday from 10am to 4pm. $10 adult admission.

Former Wrens attending a talk on the Colossus computer

The museum is located where codebreakers worked during WWII

3 THE NATIONAL MUSEUM OF COMPUTING
BLETCHLEY PARK, MILTON KEYNES, UK

It's a special kind of museum that can tell the story of a historical event right in the place where it happened, and that's what you get at the National Museum of Computing. Located in Bletchley Park's Block H, which was built in 1944 to house six Colossus codebreaking computers, it was pivotal in Allied codebreaking operations during WWII. Visitors to the site can take a look at these incredible machines and attend two-hour guided tours of the exhibits for further insight into their operations and impact on the history of computing.

But that's not the only thing that the museum has to offer. While it's located at Bletchley Park, it doesn't contain itself to that topic. The National Museum of Computing actually holds one of the largest collections of working historical computers in the world. There are examples of first-generation computers from the 1950s, the room-sized computers that powered innovation through the 1960s, all the way up to the software and internet age. The pre-technology age isn't ignored either as there's also exhibits on the tools used by human computers to make accurate calculations before the digital age was in full swing. As a historic location that also offers in-depth analysis of the history of computing, the National Museum of Computing is an ideal spot to check out.

Open from 10:30am to 5pm, dates vary. £10 adult admission.

Jeju Island, where the museum is located, is accessible by plane or ferry

4 NEXON COMPUTER MUSEUM
JEJU-DO, SOUTH KOREA

Opened in 2013 on Jeju Island, off the southwest coast of South Korea, the Nexon Computer Museum displays the rich history of computer technology as well as its major software developments. Nexon is itself a videogame publisher, but the museum is not dedicated to its own work in this field. Instead it looks to highlight a wide array of innovations in both home computing and videogames from around the world. Included in its collections are items like the Apple I computer, the Engelbart Mouse prototype and a copy of *Pong*. It's estimated that there are around 400 pieces of hardware on display and 2,000 examples of software, so it's got plenty to share. The museum has also undertaken a digital archiving project, hoping to preserve examples of software and games that are no longer in production or compatible with modern devices. One example is Nexon restoring an early version of one of its own games, *Nexus: The Kingdom Of The Winds* from 1996. The museum is also involved in educational programs for children and more advanced students who might be interested in pursuing a career in information technology.

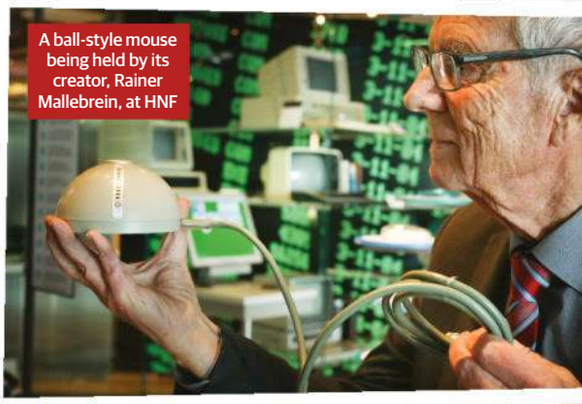
Open Tuesday to Sunday, 10am to 6pm. Roughly £5 adult admission.

5 HEINZ NIXDORF MUSEUMSFORUM
PADERBORN, GERMANY

The collection of over 2,000 objects on display at this museum began with one man, Heinz Nixdorf. Born in Paderborn, he began working in computers in the early 1950s and started his own company in 1952 in his hometown. Computers of his own design followed in the 1960s with Nixdorf Computer AG becoming a market leader in Germany and making Paderborn a technology centre for the country. In 1977, marking 25 years of the company, he was gifted some historic computer devices and the idea for a museum began to sprout.

Opened in 1996, the Heinz Nixdorf Museumsforum (HNF) today claims to be the largest computer museum in the world. Building on those original items, it now has artefacts dating back to the earliest use of numbers and letters in Mesopotamia up to recent innovations in information technology. Its mission is to promote the industry and to that end the HNF complex also holds symposiums.

Open Tuesday to Friday from 9am to 6pm, and Saturday to Sunday from 10am to 6pm.



A ball-style mouse being held by its creator, Rainer Mallebrein, at HNF

The spacious museum offers exhibitions for all ages

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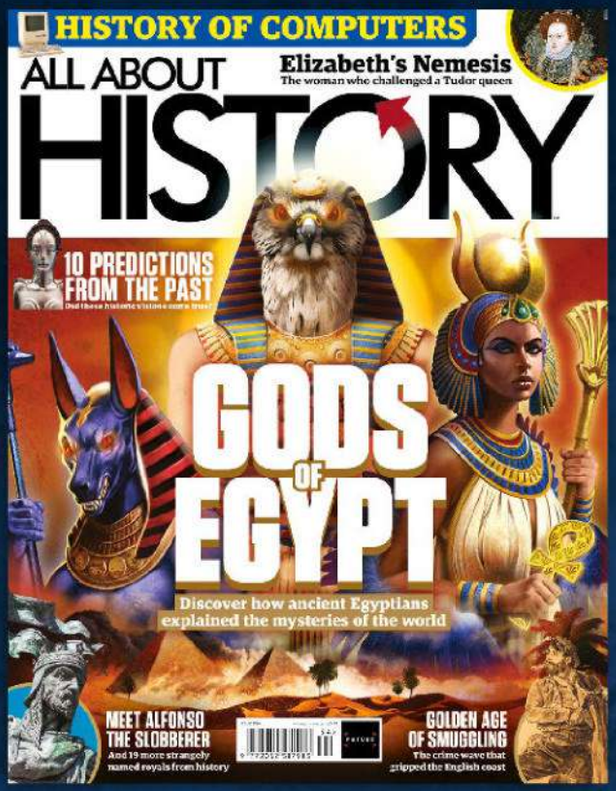
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GARRY J SHAW

Garry Shaw is the author of *Egyptian Mythology: A Traveller's Guide From Aswan To Alexandria* and *The Egyptian Myths: A Guide To The Ancient Gods And Legends*. His latest book is *The Story Of Tutankhamun: An Intimate Life Of The Boy Who Became King*. **Follow him on Twitter @GarryShawEgypt and Instagram @garryjshaw**

GODS OF EGYPT

Discover how ancient Egyptians explained the mysteries of the world

Written by Garry Shaw

The goddess Isis had poisoned the sun god Re. She watched as various deities approached the ailing divinity, each desperately trying to heal him, but none could find a cure to his suffering. One second the god was burning up. The next, he was freezing. He shook. His heart was on fire. The situation was getting desperate, but the gods had little information to go on. All they knew was that he'd been bitten by a snake and poisoned by its venom. Isis could help, but she held back for now. After all, this poisoning was all part of her plan to learn the sun god's secret name, a key to his power, hidden deep in his belly – and he wouldn't give it up easily.

Illustration by Joe Cummings

ABOVE Carnelian scarab depicting the revered goddess Isis and her son Horus

LEFT *Interior View Of An Egyptian Temple*, by Jean-François Thomas de Thomon, 1803

Earlier that day, Isis had collected some of Re's drool while he slept, and mixed it with soil in the shape of a snake. Because all divine fluids had creative power – even Re's drool – the creature burst into life. She placed the snake on a path where Re walked each day, and just as she'd planned, when he strolled by, it bit him. The poison flooded through his body. From that moment, Re had writhed in pain. Eventually, the gods summoned Isis for help. As a goddess of magic, perhaps she could find a solution? She approached Re and immediately asked him for his secret name – only this could save him, she said. But the stubborn sun god refused to answer truthfully. He told her many of his names, none his secret one. Only when the pain worsened, and no relief was in sight, did Re finally relent. He whispered his secret name to Isis, passing its power into her body. Her plan had worked, so there was no reason to prolong the god's suffering. Using her magic, Isis cured Re. Pleased that his illness had lifted – and apparently in a surprisingly forgiving mood – the sun god told Isis that she could pass his secret name to her son, Horus.

"THANKS TO ISIS' SCHEME, SHE GAINED ACCESS TO THE MOST POWERFUL MAGIC IN THE COSMOS"

This myth, known from various copies written in around 1200 BCE, serves as the introduction to a spell meant to relieve the suffering brought on by snake venom. It was a guarantee of efficacy to the ancient reader: the spell had worked for Isis in the mythological past, so it would work again. But the myth also had a wider significance – it explained something. Thanks to Isis' scheme, she gained access to the most powerful magic in the cosmos and the freedom to pass it on to Horus. And because each pharaoh was an incarnation of Horus, this myth served to explain the king's special position in society.

Egyptian myths were often used in this way. They explained the mysteries and complexities of nature and society, and in doing so, brought a little more control over the chaos all around us. Knowledge is power, but it also provides comfort. From our ultimate origins, to the reasons for the moon's phases and the sun's destination at night, the ancient Egyptians asked questions about everything. Their explanations – their answers to the universe's big questions – are what we today regard as myths.

MYTHS OF CREATION

All civilisations develop explanations for our origins – it's impossible to avoid pondering the start of the universe or where we all came from. The ancient Egyptians were no different, except in the sheer variety of their conclusions. Because each province had its own major divinity, each at the centre of that region's mythology, there were many variations on how creation occurred. In fact, there was no single explanation for most things in Egyptian religion; different, often contradictory, ideas existed simultaneously without causing anyone headaches.

Take the priests of Hermopolis in Middle Egypt for example. For them, the Ogdoad were responsible for creation. These eight gods – four frog-headed

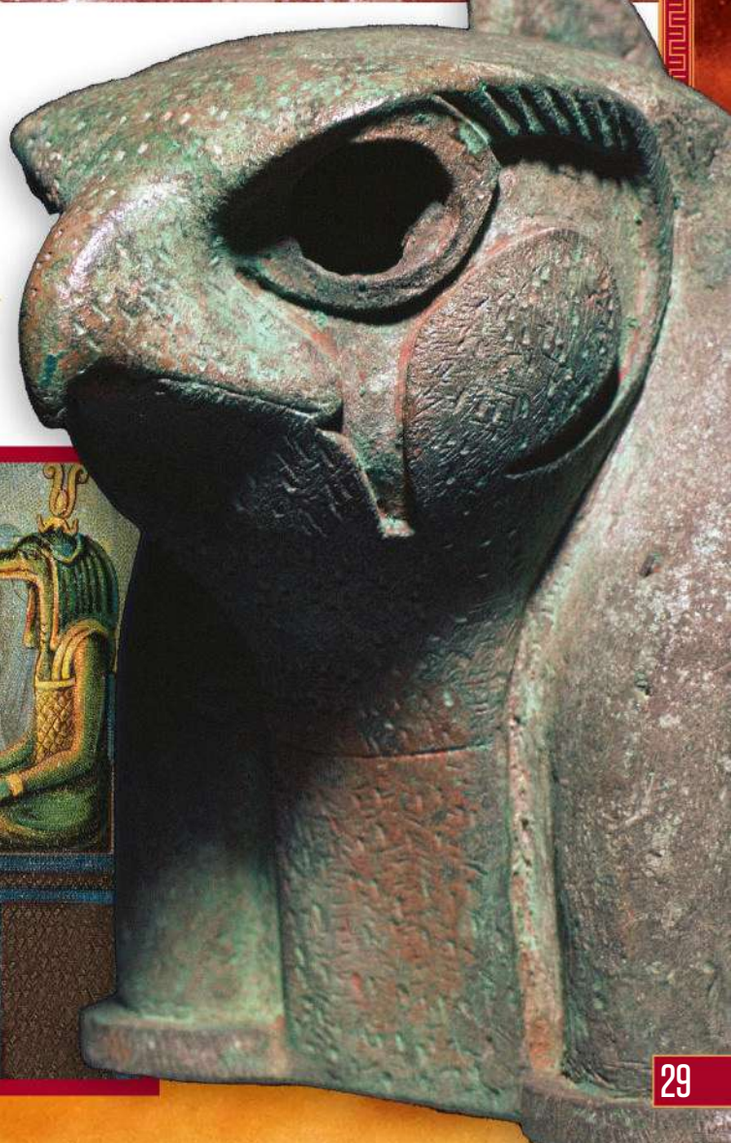
THE END OF THE WORLD

When the cosmos collapses, the ingredients for a new beginning remain

According to the *Book Of The Dead*, at the end of time, chaos will overturn balance in the cosmos. All that exists will vanish, to be replaced by the infinite waters of Nun – the universal flood that surrounds creation. Atum, the oldest manifestation of the sun god, will decide when this happens. Yet, even in this bleak time, when all life is extinguished, hope remains. When creation has been upturned, there will be two snakes in the endless ocean. One will be Osiris, who represents the force of regeneration, and the other will be Atum, a god that holds all physical creation within himself. The ingredients for a new beginning will continue to exist. To the ancient Egyptians, in chaos, there was always the potential for order, and because time was cyclical, the end of the world would eventually give way to a new era, just as the sun always rises again at dawn.

males and four snake-headed females – represented different aspects of the pre-creation universe. In pairs, they embodied darkness, the endless inert water, hiddenness, and infinity. At the beginning of time, they stood on a mound of earth where a lotus grew, and there, watched as the sun god emerged from its flower. Meanwhile, at Edfu in southern Egypt, things were a bit different. There, the god Horus created all things, and Edfu's temple stood on the first mound to emerge from a destructive flood, brought under control by gods cutting canals. At Memphis, which stood just south of modern Cairo, Ptah was the ultimate creator. This god of craftsmen and the creative spark conceived of creation in his heart – the source of thought in Egyptian belief, rather than the brain – and through his tongue, announced all beings into creation.

The priests of Heliopolis, a city that now lies beneath Cairo, developed what



LEFT A statuette of the creator god Ptah, who is typically shown tightly wrapped in a cloak and wearing a skull cap

BELOW The pharaohs of ancient Egypt were considered as divine mediators between the gods and men

RIGHT Bronze head of the sun god Re, a central deity in ancient Egypt

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THE SUN GOD'S JOURNEY

Explaining the movement of the sun was an important part of Egyptian mythology

The sun god took different forms as he crossed the sky. He was Khepri when young in the morning, Re at his strongest at midday, and Atum when old in the evening. At night, he travelled through the afterlife realm, where he faced challenges, but was re-energized in the middle of the night thanks to the power of Osiris. He was then reborn as a baby at dawn, ready for the cycle to begin again. It is this nightly drama that is shown in the decoration of the royal tombs in the Valley of the Kings.

Despite being a fundamental part of Egyptian belief, this myth could be adapted depending on local geography. The Faiyum Oasis, for example, lies to the west of where the sun was traditionally believed to set, so the explanation for the sun god's movements had to be changed. According to the *Book Of The Faiyum*, in the morning, the sun god rose from the waters of Lake Qarun, which dominates the oasis. He sailed across the sky and eventually set in the western side of the lake. Upon entering the lake, the god transformed into a crocodile and swam through its rejuvenating waters, becoming young again in time to board his day boat on the eastern shore. The new day could now begin.

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is perhaps the best known of Egypt's creation myths. In the beginning, the universe was a still, dark, and endless ocean, represented by the god Nun. Lost within this ocean was a seed, the god Atum, who gained self-awareness. Atum separated himself from the endless ocean, expanding like a bubble or balloon to create a space in the waters – the first land. Then, either through spitting, sneezing, or masturbating (depending on the variation of the myth), Atum created the gods Shu and Tefnut. He passed his ka – a form of lifeforce – into their bodies and gave them the breath of life, enabling them to be active in the world.

Shu represented the atmosphere and dryness, but the meaning of Tefnut is harder to define – she may have been moisture or the afterlife realm's atmosphere, mirroring the role of Shu. Soon after, the two newborn gods went missing, so Atum sent his Sole Eye to find them. The light that shone down from this manifestation of Atum's power became the first sunrise. Atum could now be called Re-Atum, representing the sun god at his most powerful and his oldest. Shu and Tefnut went on to become the parents of the earth god Geb and the sky goddess Nut. And in turn, these two deities gave birth to Osiris, Isis, Seth, and Nephthys. Together, these nine divinities formed the Ennead, the first gods and goddesses. Some would go on to serve as the first kings of Egypt.

THE HEAVENLY COW

After creation, the sun god Re reigned as king of Egypt. When he became old, he heard that humans were planning an uprising against him, so he summoned an assembly of the gods to decide on a plan. Re felt that it was time to eradicate his creation, but he was willing to hear other opinions. No one disagreed. Nun

"RE WAS APPALLED TO LEARN THAT HUMANS HAD CREATED WEAPONS AND THE CONCEPT OF MURDER"

suggested that Re should dispatch his Eye in the form of the goddess Hathor – usually a goddess of love, music, and sex – to deal with the rebellious humans. The gods thought that this was a good idea, so Hathor duly transformed into the Eye and flew off towards the desert where the humans were hiding. When she found them, she slaughtered everybody, and fell into such a blood-thirsty rage that she changed from the friendly Hathor into the fearsome goddess Sekhmet. Meanwhile, back in his palace, Re was having second

thoughts. If all humanity died, he'd be a king without subjects, and that wouldn't be any fun at all. When Hathor-Sekhmet arrived at the palace to report on her mission, Re told her to stop killing people, but she refused to listen and flew from the audience hall to continue her rampage.

In order to save what remained of humanity, Re sent his servants to gather up red ochre and to brew vast quantities of beer. When it was all gathered and ready, they mixed the two ingredients together, turning the beer red, and the next morning, poured 7,000 jars of the concoction into the fields where Hathor-Sekhmet slept. When the goddess awoke, she thought that she was wading in blood. She drank the beer and became so drunk that she fell asleep, abandoning her mission to destroy humanity. To ensure that this never happened again, Re issued a decree that beer should be brewed for all festivals dedicated to Hathor (thus explaining the drunkenness associated with her celebrations).

Re had managed to undo the mistake he'd made, but he still felt weary. He wanted to abdicate the throne, but as a god, his only option was to depart for the sky. Despite having some second thoughts, his resolve to leave was strengthened when he learned that humans had created weapons and the concept of murder. Appalled, he asked the goddess Nut to transform into a heavenly cow and carry him into the sky. In doing so, the sun god separated himself from creation.

Now sailing in the sky, across the underside of the infinite ocean, and onward, down beneath the horizon into the afterlife realm, Re had begun the sequence of day and night. The god Thoth manifested as the moon and served the sun god as his wise vizier. Stars and planets appeared in the night sky. The cosmos had taken its current and final form. Re's son Shu now assumed the kingship in his place, until he too eventually departed for the sky, later to be followed by Geb. The kingship then

BELOW The goddess Isis was usually shown in human form, though sometimes with the addition of protective wings

RIGHT The Pyramid Texts on the walls of the Pyramid of Unas at Saqqara, built around 2300 BCE, contain the earliest known references to Osiris and Isis

RIGHT-INSET Statue of a pharaoh holding an offering for Maat, the goddess of truth

passed to Osiris, whose story is one of ancient Egypt's most enduring myths.

THE DEATH OF OSIRIS

As a god of regeneration and king of the blessed dead, Osiris remained important throughout ancient Egyptian history. Normally shown in art as a mummy with either green or black skin, he holds a crook and flail in his hands, each a symbol of kingship, and wears a bulbous crown with feathered plumes on his head. When a person died, it was Osiris who oversaw their judgement. From his throne, flanked by his sisters Isis and Nephthys, he watched as Anubis weighed the hearts of the dead against the feather of maat, symbol of order, justice, and cosmic balance. If judged worthy, the person entered the afterlife. If not, they were eaten by Ammit, a ferocious beast that was part-crocodile, part-hippo, and part-lion or panther. But it hadn't always been this way for Osiris. Originally, he'd been a beloved king on earth.

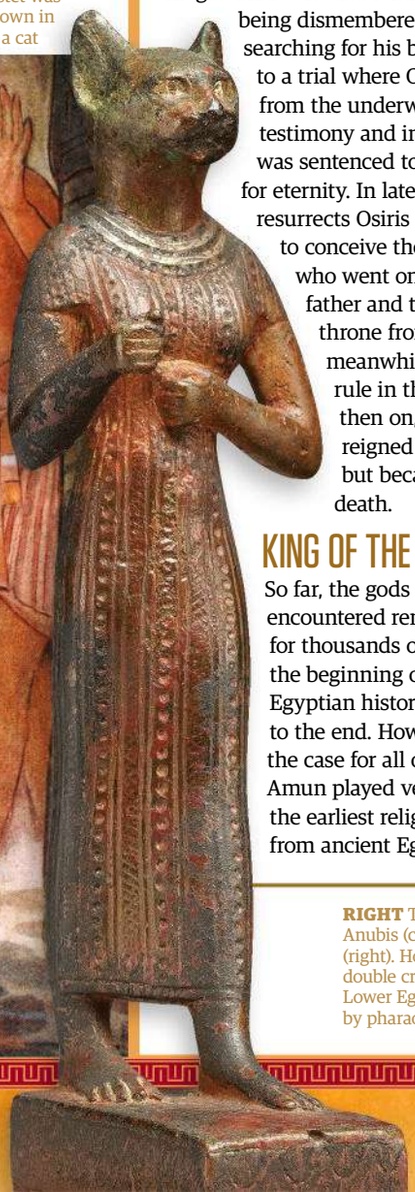
One day during his reign, Osiris attended a party thrown by his brother

"AMUN-RE'S PROMINENCE REACHED EVEN GREATER HEIGHTS UNDER THE KINGS OF THE 18TH DYNASTY"

Seth. For a game, Seth had brought along a spectacular, ornate chest, and told his guests that whoever fit exactly inside could keep it. Everyone took a turn, but when Osiris lay down, Seth's followers leapt forward, nailed the chest shut, and hurled it into the Nile. Osiris drowned, and the chest was carried by the current all the way to Byblos in Lebanon, where it washed up on a beach and was enveloped by a tree, perhaps thanks to Osiris' regenerative powers. Soon after, while out walking on the beach, the tree caught the eye of the Queen of Byblos. It will make a wonderful column for my palace, she thought, and had it cut down. Meanwhile, Isis left Egypt in search of her husband's body. She tracked the chest to Byblos, where she met members of the queen's entourage and took a job at the palace. Each night, she transformed into a bird and flew around the pillar mourning her husband, until one day, her powers were discovered. Knowing that it was time to leave, she pulled the chest from the tree and returned to Egypt. But this was not the end. Seth found Osiris' corpse, tore him into pieces, and spread the body parts across Egypt. Again, Isis set off on a quest, this time to rebuild her husband's corpse. She found every part except for his phallus, which had been eaten by a Nile fish and had to be replaced. The destruction and healing of Osiris' body is one of many myths that explain the phases of the moon.

ABOVE According to the *Book Of The Dead*, Ammit, the devourer, ate those who failed to pass Osiris' judgement

BELOW God of the moon, Thoth, was usually portrayed as having a man's body with the head of an ibis



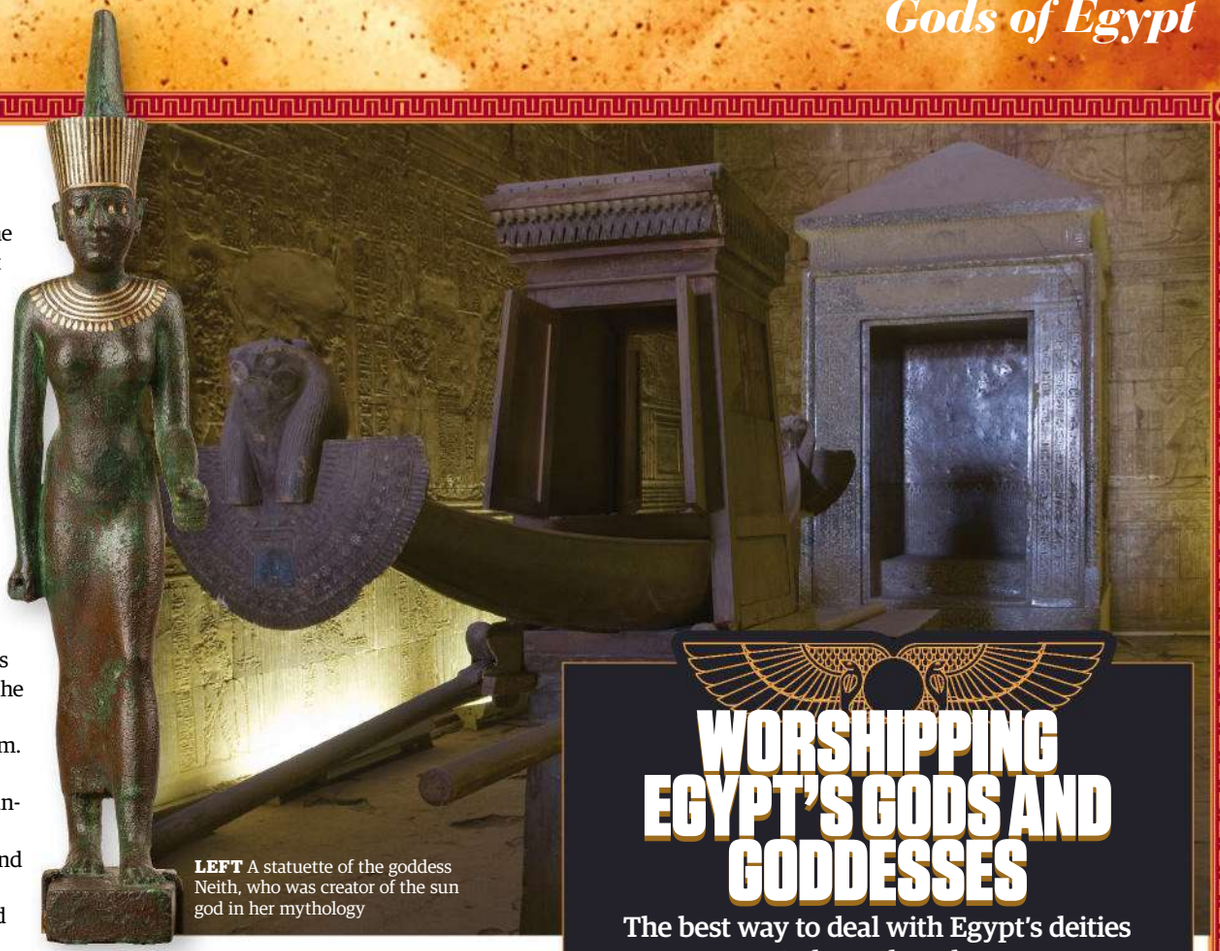
RIGHT Worshipped at the city of Bubastis, the goddess Bastet was typically shown in the form of a cat

This version of the Osiris myth was recorded by the Greek writer Plutarch in the 2nd century CE, but traces of it can be found in the earliest known myths of Osiris, inscribed on the walls of the Pyramid of Unas at Saqqara over two thousand years earlier. In these texts – which consist of a long list of spells meant to help the dead king reach the afterlife – Osiris' death is not mentioned explicitly, because describing such a chaotic event would invite danger into the king's burial. In one spell, we are told that Seth caused Osiris to fall on his side and that Geb searched for his body. Others say that Seth kicked Osiris, or that Osiris was hurled into water. Isis and Nephthys then searched for the god's body and revived him with magic. There are also references to Osiris being dismembered, to Horus searching for his body parts, and to a trial where Osiris was raised from the underworld to give testimony and in which Seth was sentenced to carry Osiris for eternity. In later myths, Isis resurrects Osiris long enough to conceive their son, Horus, who went on to avenge his father and take Egypt's throne from Seth. Osiris, meanwhile, continued to rule in the afterlife. From then on, each pharaoh reigned as Horus in life, but became Osiris in death.

KING OF THE GODS

So far, the gods we've encountered remained popular for thousands of years – from the beginning of ancient Egyptian history right through to the end. However, this wasn't the case for all of them. The god Amun played very little role in the earliest religious writings from ancient Egypt. At Thebes

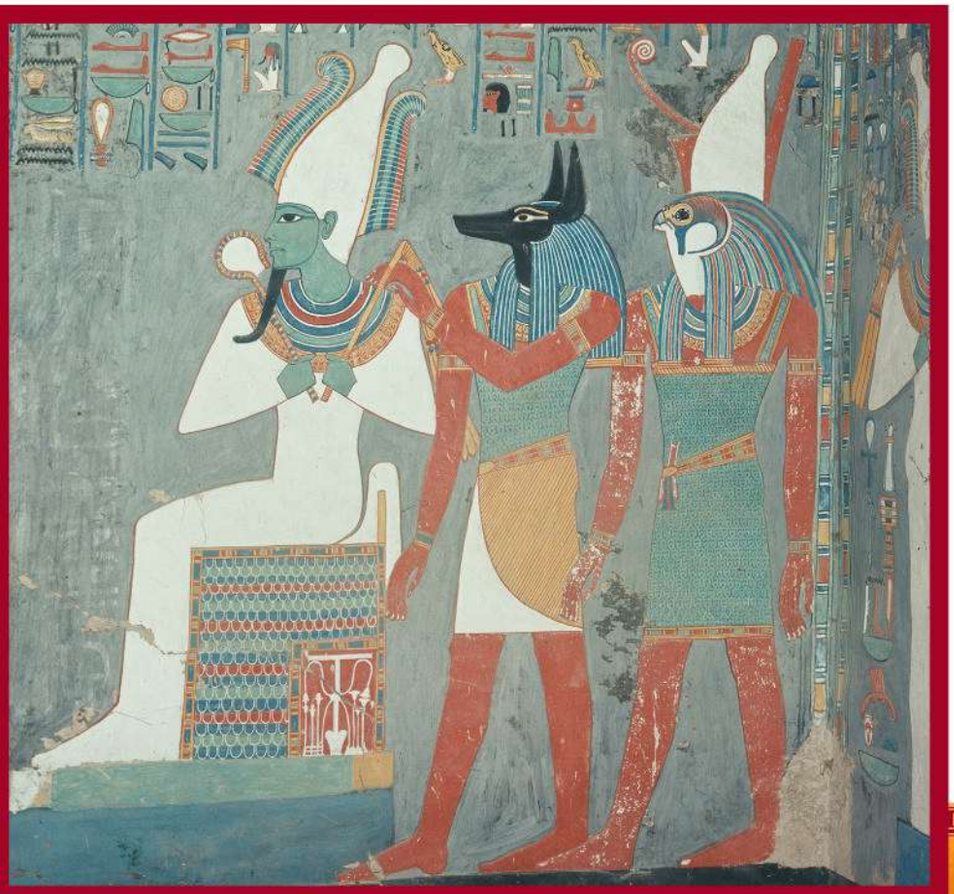
RIGHT The gods Osiris (left), Anubis (centre), and Horus (right). Horus wears the double crown of Upper and Lower Egypt, usually worn by pharaohs



LEFT A statuette of the goddess Neith, who was creator of the sun god in her mythology

(modern Luxor), an unimportant town for the first thousand years of Egyptian history, Amun was the primary god, representing all that was hidden in the cosmos, while at Hermopolis, he was one of the eight gods of pre-creation. There was nothing to suggest that he would ever become anything more. This situation changed with the start of the Middle Kingdom, around 2000 BCE, when Egypt's new royal family came from Thebes. Under their rule, they expanded Amun's Theban temple and four of the kings were called Amenemhat, meaning 'Amun to the Front'. This royal backing rocketed Amun to the top of the pantheon, and people across Egypt began to worship him. To help further, Amun was fused with the sun god to become Amun-Re, a new all-powerful god that represented all that was hidden and visible in the cosmos.

Amun-Re's prominence reached even greater heights under the kings of the 18th Dynasty (c. 1549-1298 BCE), who also came from Thebes. Amun-Re became king of the gods, and it was the duty of each pharaoh (some called Amenhotep, or 'Amun is Content') to lavish gifts on his temple, often from the spoils of war brought back from empire-expanding campaigns. Kings inscribed their successful deeds on the temple's walls and erected celebratory stelae (inscribed stone slabs) in the grounds. Each expanded the god's temple too, adding courtyards, shrines and columned halls, and made it the focal point of important ritual



WORSHIPPING EGYPT'S GODS AND GODDESSES

The best way to deal with Egypt's deities was to keep them happy

According to the myths, Egypt's deities existed along with humans, ghosts and demons in the same bubble of creation that floats in the endless waters of Nun. Within this bubble, they had jobs to do, and could help, hinder, or ignore people, depending on their mood. Humanity, after all, was an accident, created from the tears of the sun god when he cried, so they were of little importance in the grand scheme of things. For humans, however, the best approach to living among such powerful beings was to keep them happy. To do this, they built temples that served as earthly palaces for the gods.

In ancient Egypt, priests were known as "god's servants", and there were different ranks and levels of purity required to enter the most sacred areas of a temple. Only the temple's high priest and the king were allowed inside the god's sanctuary to make the offerings of food, drink, incense, and clothing that the god inhabiting the divine statue expected three times per day. These offerings were accompanied by complex age-old rituals that had to be performed correctly. The gods enjoyed order and balance – for things to be done in the exact same manner that they'd been done since the beginning of time – and any mistakes could mean catastrophic consequences for the cosmos.

Ordinary Egyptians were not allowed inside these temples (perhaps with the exception of the first courtyard on special occasions). In fact, the closest that they could get to the divine statues was during festivals, when the statues were placed on portable boats, carried on the shoulders of priests, and taken out of the temple on procession. This gave people the chance to ask "yes" or "no" questions to the gods, with their divine boats dipping forwards or backwards in response.

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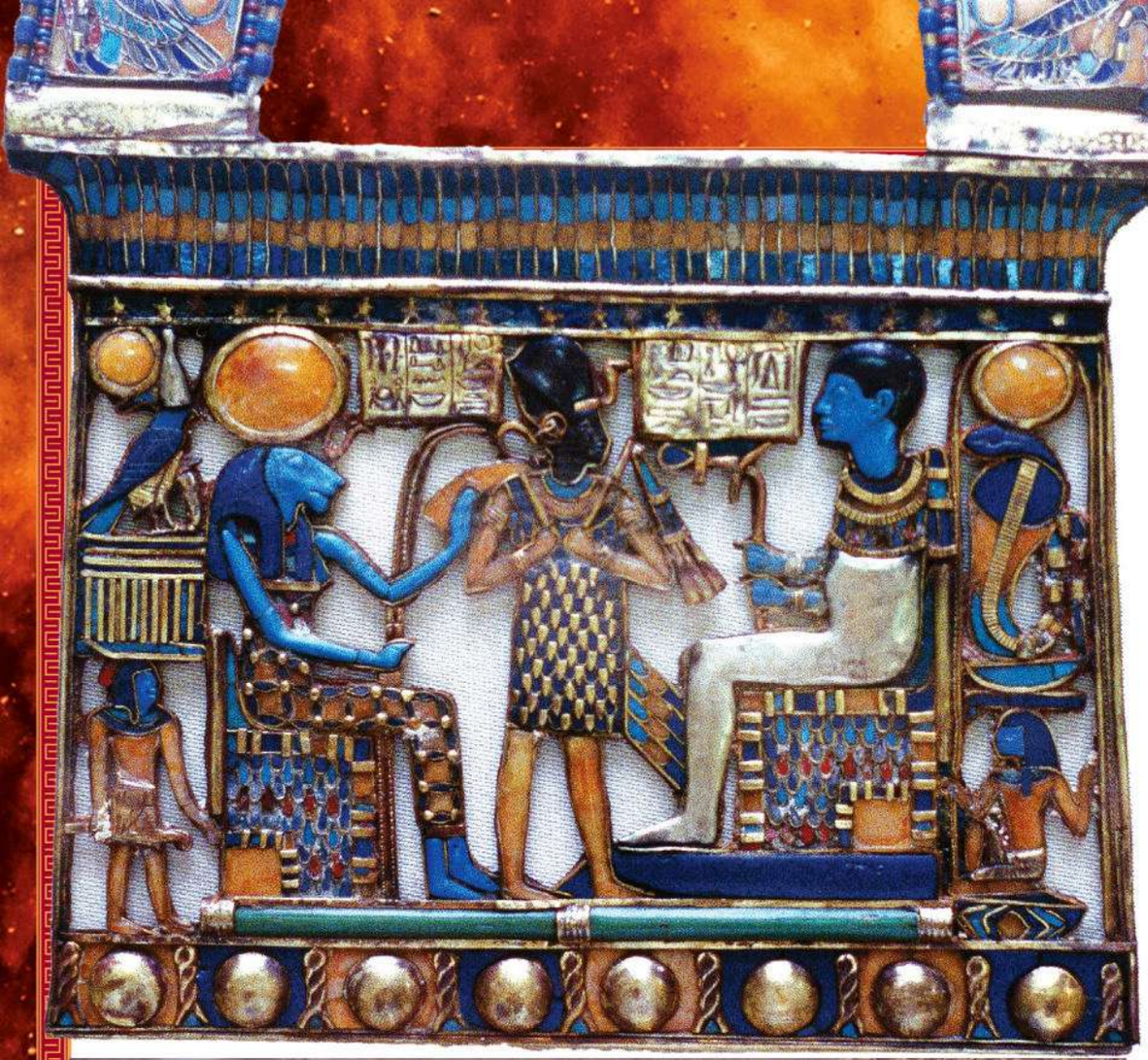
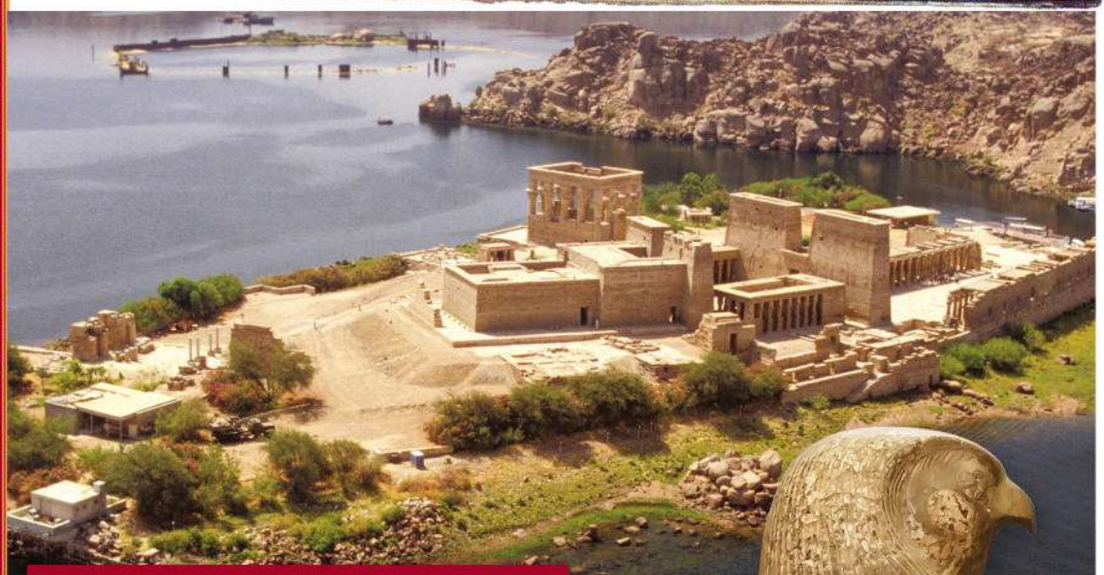
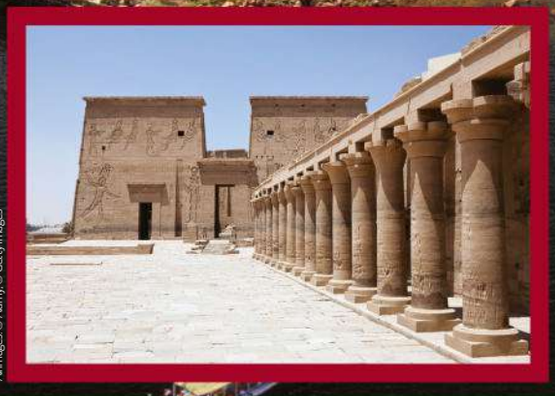
processions around Thebes. Yet despite this new prominence, Amun-Re continued to play little role in mythology beyond being a creator. To the Theban priests, he was now the god that created the Ogdoad, making him older than the pre-creation universe. He was hidden and unknowable, behind everything, and existed beyond even the gods' understanding. According to one hymn, if a person managed to properly comprehend Amun-Re, they died – a good reason not to think too deeply about him.

RISING GODS

After his unexpected rise to the top of the pantheon, Amun-Re dominated Egyptian religion until the end of ancient history. Nonetheless, during the Third Intermediate Period (c. 1069-664 BCE), when Egypt became politically fragmented, and following the country's reunification in the Late Period (664-332 BCE), other gods and goddesses gained prominence. This is because a number of royal dynasties came from different cities in quick succession, and each dynasty raised their preferred deity to a new height. Among them was the city of Bubastis in Egypt's Delta, which was home to the 22nd Dynasty (c. 948-715 BCE) and the cult centre of the cat goddess Bastet. Consequently, it became an important breeding ground for cats. These were killed, mummified, and sold







TOP Pectoral jewel from the tomb of Tutankhamun, depicting Ptah and Sekhmet

LEFT & ABOVE The Temple of Isis at Philae was built late in ancient Egyptian history and became a popular place of pilgrimage

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ABOVE The god Atum fights the chaos snake Apophis, nemesis of the sun god, in a scene from the *Book Of Gates* in the Tomb of Ramesses I in the Valley of the Kings

BELOW A statue of Ramesses III, flanked by the gods Horus (left) and Seth (right). In mythology, these two gods fought for Egypt's crown

to pilgrims who, in turn, offered them to the goddess at her temple. Similar practices happened elsewhere, with the mummified creature switched according to the deity's associated animal – dog or jackal mummies were offered to Anubis, and crocodile mummies to Sobek.

The city of Sais, also in the Delta, was home to three of Egypt's later royal dynasties. The prime deity there was Neith, a goddess of warfare, hunting, and weaving, who had a long history but played a secondary role in most myths. The earliest written reference to her comes from the Early Dynastic Period (c. 3150-2584 BCE), at the beginning of Egyptian history, when her name formed part of the names of queens, but her hieroglyphic symbol is known from as far back as the Predynastic Period, before Egypt was unified under a single king. In a myth recorded on the walls of Neith's temple at Esna in southern Egypt, the goddess was the first deity to emerge from the waters of Nun. She spoke everything into existence, from Egypt itself to all divinities, including the sun god, who saw her as his mother. Re's nemesis, the chaos snake Apophis, developed out of her spit. Neith protected the young sun god from Apophis and fought the rebels that emerged from one of the snake's eyes. Once the battle was won, they held a grand celebration of their victory at Sais.

THE GODDESS ISIS

Despite appearing frequently in spells, hymns, and funerary scenes from around 2300 BCE onwards, in general, Isis was not treated with the same importance as Osiris or Horus. She didn't even have her own temples until the Late Period. This all changed in the years following the death of Alexander the Great in 323 BCE. The world he left behind became destabilised. The future looked uncertain. People moved great distances in search of opportunities to improve their lives, and wherever they settled, hoped to find others who shared their experiences and beliefs.

"BECAUSE OF ISIS' NEWFOUND FAME, PILGRIMS FLOCKED TO VISIT HER TEMPLE AT PHILAE"

As the years passed, merchants, soldiers, and travellers spread the word of Isis. Her mythology connected with ordinary people – she was a mother who had suffered, just like many in these troubled times. As Isis' popularity grew, people built temples to her across Europe. One stood in London, one in Mainz, another in Pompeii. Wherever a devotee travelled or settled, they could find like-minded Isis worshippers, a ready-made community in an increasingly cold world.

Because of Isis' newfound fame, pilgrims flocked to visit her temple at Philae in southern Egypt, which was primarily built around 332-30 BCE, under the Ptolemaic Dynasty, who ruled the country after Alexander's invasion. But this new cult of Isis differed from traditional Egyptian religion. Now, Isis was all powerful in the pantheon. She invented writings and laws, and all goddesses were simply manifestations of her power. According to inscriptions at Philae, she led the Ennead of Heliopolis and was responsible for the Nile flood – a role normally assigned to the god Hapy. She destroyed Egypt's enemies, and defeated the chaos snake Apophis. Indeed, her cult was so popular that her temple at Philae was the last temple in Egypt to close, by order of the eastern Roman Emperor Justinian in around 537 CE.

Ultimately, then, Isis didn't just take the sun god's secret name, she replaced him, and went on to become the last of Egypt's deities – cosmic forces that had served to explain the workings of our universe for thousands of years.

The Nun's Lover

John V of Portugal, 1689 - 1750

It might be fair to say that European royals of history are more notable when they didn't have a plethora of mistresses and affairs, but few can claim to have such a distinctive preference in paramours to earn the nickname the nun's lover. So it was for John V who had a series of affairs with nuns, one lasting around a decade. It doesn't seem as if he was too fussy though as other affairs were also chronicled.

The Elbow-High

Władysław I Łokietek, King Of Poland, c.1260 - 1333

It should be fairly obvious where Władysław I, a celebrated king who managed to consolidate provinces into the single Polish nation, got his name from... he was short. Or we thought he was. Recent research has put his height at 152-155cm (5'0"-5'1"). Legend had claimed that he was a diminutive 120cm (3'11"). As it happens, the average male height would have been about 165-167cm (5'5"-5'6") at the time. Instead some experts believe it was intended as an insulting name when he was a lowly prince of limited influence.

What's in a name?

The Bad Entertainer

Halfdan Olafsson, King of Uppsala, Unknown - c.784

As much as we would like to tell you that Halfdan got his name because he tried his hand at stand-up comedy, the explanation for his epithet is much simpler. While known as a generous king in terms of pay for his men, he didn't provide them with enough food. So, he didn't entertain them well. Still, Halfdan fared much better when it came to a nickname than his father, known as Eystein Fart. Alas, the reason for that appears lost to time.

Image source: wiki/Snorre Sturlason

The Unready

Æthelred II of England, c.968 - 1016

Some names are just a little easier to mock than others and it turns out that royals courts are often very similar to children's playgrounds when it comes to cruel wordplay. So, when your name means 'noble counsel' and your reign is dogged by invasions and failures, you end up being called 'Unraed' meaning bad counsel or 'unready'. So it came to be that we got one of England's most famous royal nicknames.

The Cabbage

Ivaylo Of Bulgaria, Unknown - 1281

Rising up as a rebel leader of peasant origins in Bulgaria, Ivaylo's story has taken on near-legendary status, achieving military victories against the mighty Byzantines and Mongols from 1277. His success saw him proclaimed emperor from 1278 to 1279. Due to his lowly origins, he earned the name 'Lakhanas', meaning cabbage. He was ultimately pushed out by nobles and beheaded in 1281.

The Do-Nothing

Louis V, c.966 - 987

Crowned while his father was still alive in 979 and dying only a year after his father died in 987, Louis Do-Nothing earned his moniker with a reign marked by failure on most fronts. His main objective had been to retake the southwest region of France known as Aquitaine, which he couldn't achieve, his wife ran away without an heir, and then he died aged 20 in a hunting accident, ending the Carolingian dynasty.

The Slobberer

Alfonso IX, King Of Leon and Galicia, 1171 - 1230

As unfortunate nicknames go, this one stuck hard to a monarch who, for the most part, seems to have worked hard to reform and evolve his kingdom. He opened a university, convened a parliament for greater representation and incurred the wrath of the Vatican by teaming up with the Muslim Almohads to expand his lands in conflict with Castile. But he also had a temper and was known to launch into mouth-frothing tirades. Hence, he became Alfonso 'Baboso', meaning the Slobberer.

20 strangest royal nicknames from history (and where they came from)

William the Conqueror. Suleiman the Magnificent. Ivan the Terrible. Some royal nicknames are pretty memorable and tell you a lot about the person who earned them. Whether given to them in their lifetime or posthumously, you immediately get a picture of how they were thought of and remembered. However, not everyone is so lucky to get such clear and powerful epithets or sobriquets. Here we chronicle some of the most peculiar and surprising royal nicknames and explain how they came to be.

The Gouty

Bermudo II, King Of León, c.953 - 999

Supported by the nobles of Galicia and Portugal, Bermudo challenged and overthrew Ramiro III in Galicia in 982, going on to become king of León also in 984. However, as his nickname of *el Gotoso* suggests, he suffered in later life from gout. He appears to have been a controversial figure in the years that followed his reign, not least as he relied on the support of the Caliphate of Córdoba for protection in the region.

The Queen of Sad Mischance

Isabella II of Spain, 1830 - 1904

Isabella ascended as a child after the death of her father, who had only just signed into law that she would inherit the throne. She faced opposition from the previous heir apparent, her uncle, and continued to have challenges to her power in the years to come, including the government who pushed her into a marriage, signing laws and more. Initially popular with the people, her spending and chaotic governance saw them turn on her and she had to flee to France. A life of sad mischance, indeed.

The Dung-Named

Constantine V, Byzantine Emperor, 718 - 775

The legacy of Constantine V's reign was tarnished after he backed a movement against iconophiles, during which many churches saw their religious icons and relics - many quite valuable - seized or destroyed. There followed a rumour that during his baptism, the infant Constantine had defecated into the baptismal font. Thus, the emperor began to be called *Kopronymos* or 'named in dung'.

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The Be-shitten

James II of England, 1633 - 1701

Don't get on the wrong side of Ireland. Advice that many English royals could have heeded over the centuries, but James II was one of many to make the error. He assembled an Irish and French force to take on William of Orange for the throne at the Battle of the Boyne, but lost, leaving Ireland for France. Seen in Ireland to have failed in his duty, he earned the nickname *Séamas an Chaca* or James the be-shitten, if you prefer.

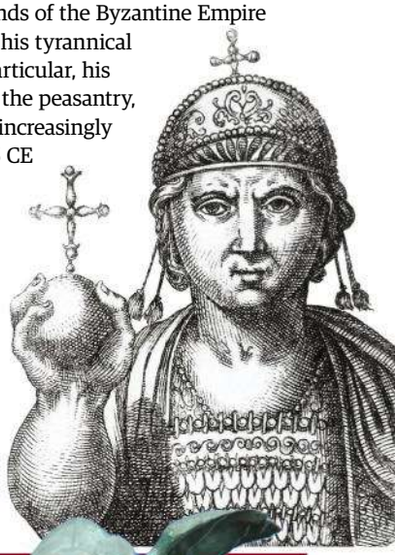
The Beer Jug

John George I, Elector of Saxony, 1585 - 1656

A ruler who would much rather be drinking or hunting than dealing with the complex inter-state politics of the era, John George I still found himself dragged into the arguments that resulted in the Thirty Years' War. He flipped sides a couple of times, but ultimately seems to have weakened Saxony's standing in Germany. He just wanted to "drink his beer in peace" so his various names of 'Beer Jug' and 'Drunkard' are easy to understand.

The Slit-Nosed

Justinian II, Byzantine Emperor, c.669 - 711



While Justinian II had some successes in reclaiming lost lands of the Byzantine Empire early in his reign, his tyrannical policies and, in particular, his heavy taxation of the peasantry, saw him become increasingly unpopular. In 695 CE an uprising led by Leontios, a senior general in the army, saw Justinian overthrown and exiled. To add injury to insult, Justinian's nose was cut off, earning him his nickname for posterity.

The Lisp and Lame

Eric XI of Sweden, 1216 - 1250

Don't let anyone ever tell you that a poem can't do you any harm. Thanks to the *Eric Chronicle*, the 14th century medieval rhyming history of Swedish kings, we came to know Eric XI as limping in his walk and lisping in his talk. So it came to be that while he was simply Erik Eriksson in his own time, a king who inherited the throne as a child only to flee in the face of a rival and then return with little authority, became known to posterity as Eric the Lisp and Lame.

The Book-Lover

Coloman, King Of Hungary, c.1070 - 1116

While there is no shortage of darker tales around King Coloman (blinding his rival and infant son, for instance) the Hungarian king is best known as a celebrated statesman of his era who expanded his kingdom while also implementing new laws, such as outlawing trials of supposed witches, whose existence he denied. It's this legacy that earned him variations of the name Learned, Possessor of Books or the Book-Lover.

Broom-plant

Geoffrey V, Count of Anjou, 1113 - 1151

Some names hide loftier tales, and being known as Geoffrey Broom-plant probably doesn't seem like a prestigious beginning for anything. Geoffrey got the name through his association with the *planta genista*, the Latin name of the yellow bloom flower associated with his home of Anjou that he either wore in his helmet or grew in abundance on his hunting grounds. Either way, the nickname gave us the name Plantagenet, as Geoffrey's son Henry II began a new royal dynasty in England.

Minus-a-Quarter

Michael VII Doukas, Byzantine Emperor, c.1050 - 1090

We rather like this nickname on its face, because it feels a little like those euphemisms for people who are perceived to be easily distracted or unintelligent (they're a sandwich short of a picnic, for example). However the name Parapinakes that Michael VII earned is a much duller affair. His reign oversaw an attempt to nationalise grain sales, leading to wheat prices increasing and buyers getting a quarter less wheat for their money. He abdicated in the face of a military uprising against his rule shortly after.

The Asleep

Sebastian of Portugal, 1554 - 1578

The name for this monarch derives from messianic tales that formed after his death. A deeply religious king, raised by Jesuits, Sebastian committed himself to a crusade against the Muslims in Morocco. He led a force of warriors to Larache in 1578 only to see his army crushed by the Moroccans who greatly outnumbered them. He is thought to have died in the battle, but rumours he survived persisted, leading to a legend that he would one day return (or 'awaken') to free Portugal from Spanish rule.

The Sausage-Maker

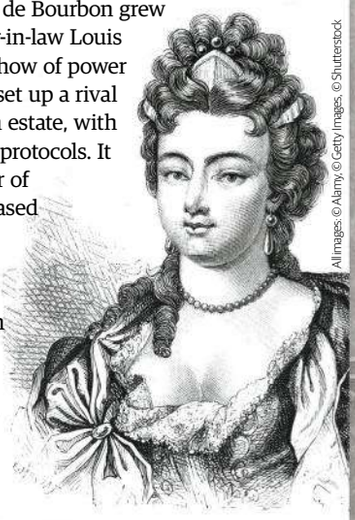
Count Manuel Godoy, Prime Minister Of Spain, 1767 - 1851

Reading how other nobles talked about and treated Godoy, you would think he was a peasant elevated to nobility. In reality he was from a noble, but poor, family and rose in influence after catching the eye of Maria Luisa of Parma, wife to the future Charles IV. An affair followed as did numerous titles and honours, not least two terms as prime minister. His nickname of *Choricero* was a contemptuous reference to the popular food in his home of Extremadura.

The Queen Of Bees

Anne, Duchess Of Maine, 1676 - 1753

What happens when a woman wants to escape the stuffy halls of power of early 18th century France? She mocks them, of course. When Anne Louise Bénédicte de Bourbon grew tired of her father-in-law Louis XIV's grandiose show of power at Versailles, she set up a rival 'court' in her own estate, with mock rituals and protocols. It included an Order of the Honey Bee, based on her nickname as 'queen' of her own realm. Medals were even made with the inscription "She is small, it is true, but she inflicts great wounds."



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THE GOLDEN AGE OF SMUGGLING

Discover the age when the coasts of Britain were awash with illegal goods

Written by Callum McKelvie

From the picturesque cliffs of rural Cornwall, to the quaint harbour town of Poole – the shores of 18th and early 19th century Britain were dangerous places to be. Due to import taxes, smuggling was rife across the country. Largely the work of a series of highly organised criminal gangs, they would stop at nothing, even murder, in the distribution of their illicit cargo. These smugglers used ingenious methods and their cruelty even earned some a place in popular folklore, notorious still to this day.

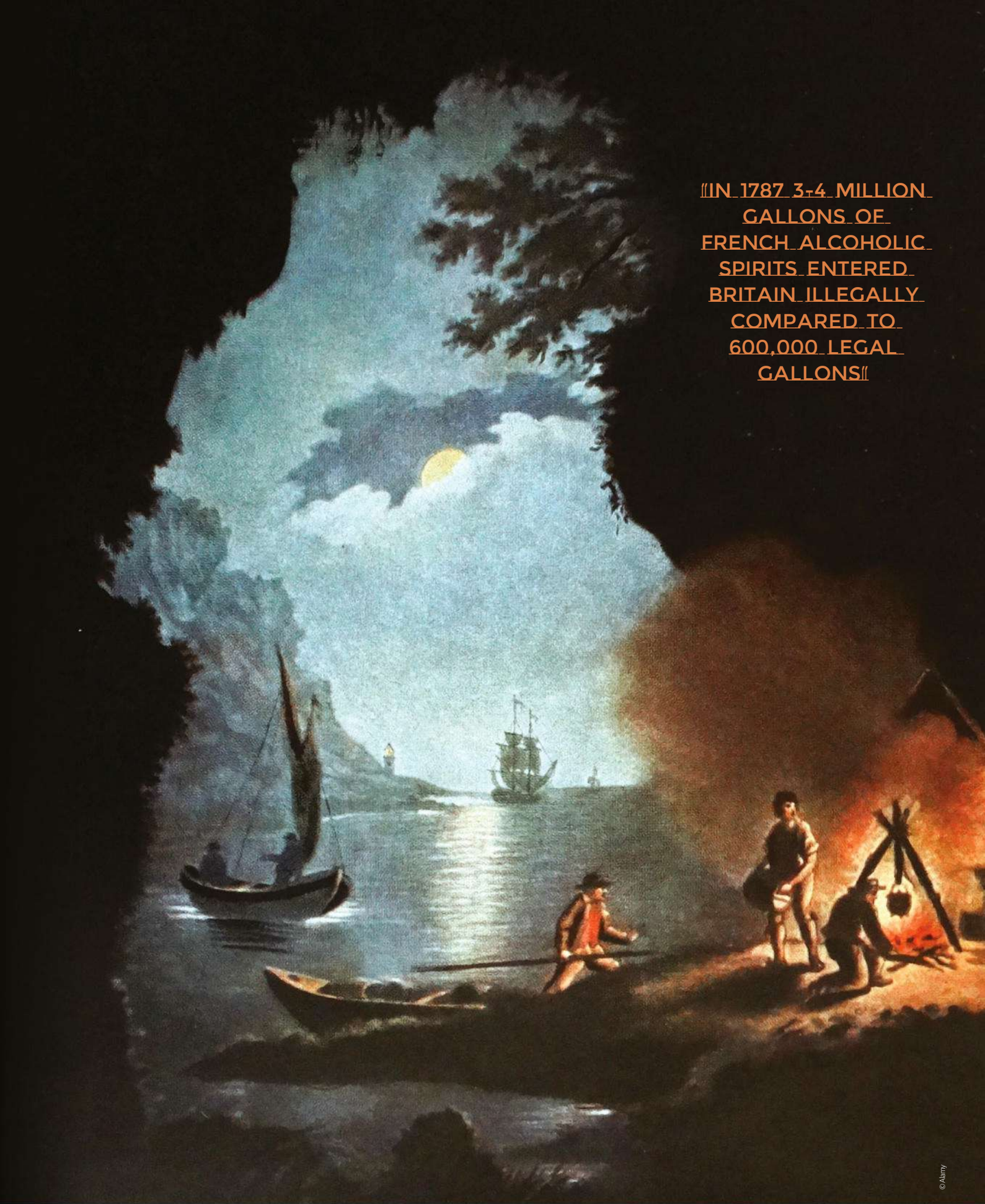
As a result this period has become known as the 'golden age of smuggling'. A time in which all manner of items, from alcoholic spirits and tobacco to ordinary tea, were brought illicitly into the country. A vast and rich topic, we've selected some of the most blood curdling facts and chilling tales surrounding these vicious criminals. So come with us as we dip our toes into the murky waters of the smugglers.

WHY SMUGGLING?

In 1651 and 1660, the Navigation Acts were introduced. These strict laws limited trade to exclusively British ships and meant only they could bring items in and out of the country. This was problematic enough, but the issue was compounded by the tendency of Georgian governments to use high taxes as a means to raise funds. These taxes could be placed on all sorts of goods, perhaps best demonstrated by the notorious tea tax, an astronomical 119%.

As such the smuggling of tea became common. According to a 1745 report, cited by Hanna Hodacs in her book *Silk And Tea In The North*, illegally introduced tea consumed in Britain was triple the amount brought in legally. Hodacs goes on to state that, "in the late 1770s and early 1780s seven and a half million pounds of tea was believed to have been smuggled into Britain."

But it was not just tea that was smuggled into the country. Items such as tobacco and brandy were equally profitable ventures for the criminal gangs, particularly after the tea tax was lowered. According to Jeff Horn in *Economic Development In Early Modern France*, William Pitt the Younger stated that in 1787, 3-4 million gallons of French alcoholic spirits entered Britain illegally compared to 600,000 legal gallons, though this was likely exaggerated. ▶



"IN 1787 3-4 MILLION GALLONS OF FRENCH ALCOHOLIC SPIRITS ENTERED BRITAIN ILLEGALLY COMPARED TO 600,000 LEGAL GALLONS"

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TOP-LEFT An 1847 illustration showing smugglers at work on the Isle of Wight

TOP-RIGHT An illustration of the Hawkhurst Gang's murder of William Galley. It is suspected he was buried alive

ABOVE An illustration of a smugglers cave, though in reality it was rare for smugglers to actually hide contraband in such places

LEFT An early 20th century illustration of smugglers hard at work, bringing their loot ashore

INSET Illustration of a 'robber' from around 1754

HOW SMUGGLERS OPERATED

But smuggling these items into the country was not easy, nor cheap. The majority of these gangs were highly organised and finance came from a variety of sources. According to the Smugglers Britain website, in the south east, smuggling operations were funded by wealthy individuals working alone or in groups. These financiers were sometimes merchants and therefore could sell the items themselves. In the case of alcohol smuggling, taverns would occasionally fund the operations, offering the illegal beverages for sale at their own bars. There were even rare cases of solo smugglers, such as Robert Hanning, who while living in Dunkirk was responsible for £40,000 worth of goods being smuggled into Britain per year.

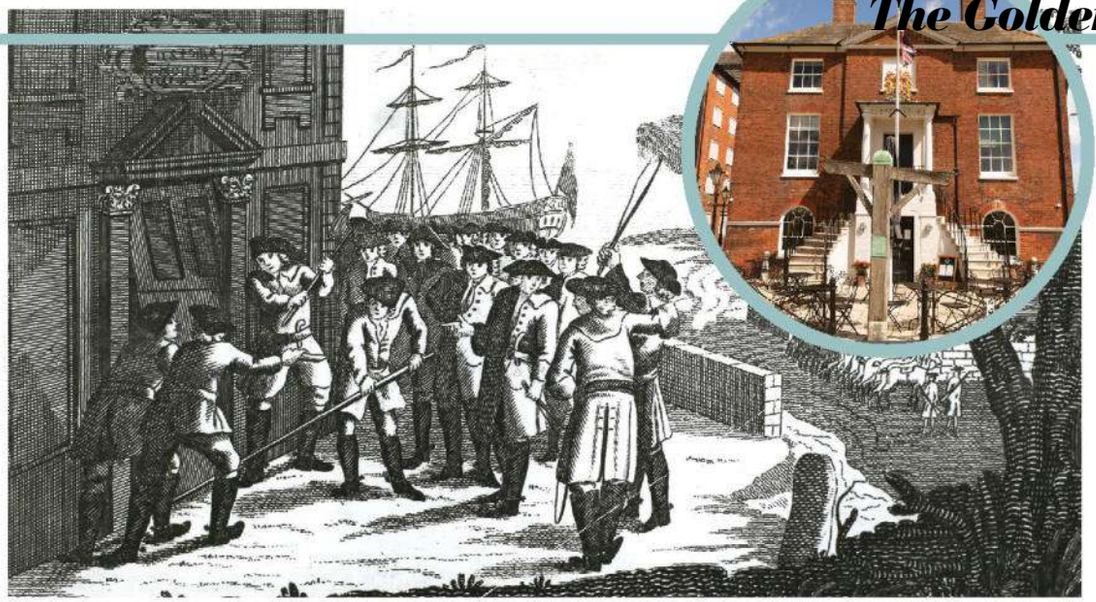
When being brought into the country, contraband was sometimes smuggled in crates or hogsheads – large barrels. However, some smugglers used more ingenious methods. According to the 1892 work *Smuggling Days And Smuggling Ways* tobacco was "made up into ropes, varying in size," and after "being slightly washed with rum, had every appearance of being hempen rope." There were even stories of smuggling vessels having entire hidden compartments specially constructed.

Once the contraband was ashore it was quickly taken away, but if under threat then the smugglers would be forced to conceal their loot until it could be retrieved later. Particularly on the Isle of Wight, caves could be used but this was rare and more often the items were buried in the sands. Nonetheless, the notion of the 'smugglers cave' has become an enduring image in popular culture.

According to John Rule and Roger AE Wells in *Crime, Protest And Popular Politics In Southern England, 1740-1850*, smugglers in this area would travel in large groups. They state that at maximum, these gangs could organise 500 to 1,000 men, though often it was much less. Rule and Wells also state that while the smugglers occasionally carried firearms, the bludgeon was their weapon of choice.

THE POOLE CUSTOM HOUSE RAID – 1747

One of the most prominent areas of smuggling was the picturesque waterfront town of Poole in Dorset. "Smuggling was rife along the southern coast of the West Country," David Watkins of Poole Museum told us. "Poole had advantages for the trade as its Harbour is one of the largest



in the world with miles of deserted shore. Although, vessels entering the Harbour could be observed by customs officers, and so more often it was the shores of Poole Bay rather than the Harbour that were used to land smuggled goods."

In 1747, Poole became the target of one of the most fearsome smuggling gangs: the Hawkhurst Gang. Taking their name from the small Kentish town from which they operated, they were described by author Joseph Dragovich as being to Kent and Sussex, "what the Krays are to London, Al Capone is to Chicago or John Gotti is to New York." In October of 1747, they set their sites on Poole after excisemen (customs officers) apprehended a large amount of the gang's smuggled tea, coffee and brandy and secreted it at the town's Custom House.

The Custom House was protected by the guns of a Royal Navy ship, a useful deterrent to any would-be attackers. And yet there was one factor that the excisemen had not taken into account – the tide. At certain times of day the retreating tide meant that the ship's guns would drop below the quayside, leaving the Custom's House defensless.

ABOVE The Custom House in Poole, Dorset as it stands today. In 1747 it was raided by members of the notorious Hawkhurst Gang

This is exactly what occurred at 2am on 28 October when the Hawkhurst Gang broke into the Custom House to retrieve the highly priced tea. According to a contemporary account in the *Salisbury Journal*, one of the members of the gang "told the Watchmen that they had come for their Own, and would have it; but would do no other Damage. And accordingly did not."

THE HAWKHURST GANG'S VENGEANCE

Although no one was hurt, the audacity of the raid sparked outrage and the authorities requested that anyone with knowledge of the incident come forward. One man believed to know the identity of one of the participants, John Diamond, was Daniel Chater, a shoemaker. Returning home with their goods, the Hawkhurst gang members passed through the town of Fordingbridge in Hampshire where they greeted crowds of eagle-eyed spectators. Diamond was said to have recognised Chater as the pair occasionally worked together in the fields and even threw him a bag of stolen tea. So when Chater's knowledge of Diamond reached the ears of the collector of Southampton customs port, Mr Shearer, he dispatched a custom's officer, William Galley, to collect Chater so that he could identify Diamond.

"CHATER WAS SLASHED ACROSS THE FACE WITH SUCH FORCE THAT HIS NOSE WAS SEVERED AND HIS EYES NEARLY POPPED OUT OF THEIR SOCKETS"

There are numerous versions of the story, but it appears that somewhere along their journey, Chater and Galley made the unfortunate mistake of stopping at the White Hart in Rowlands Castle. The inn was owned by one Elizabeth Payne who was not only sympathetic to the smugglers' cause, but also had two sons who were actually reputed to be gang members. That night, the gang burst in

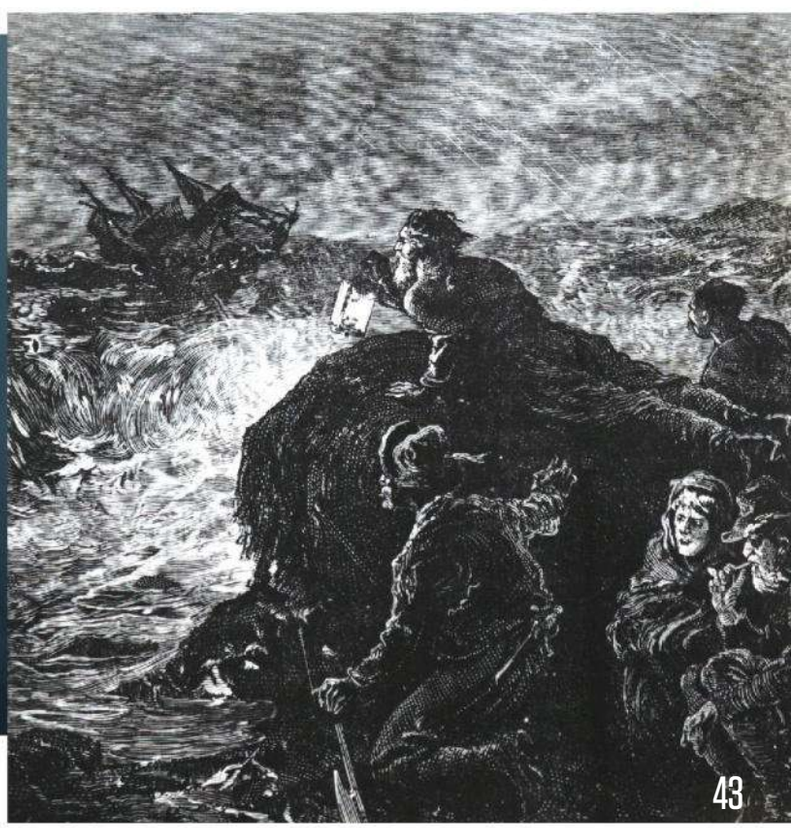
CORNISH WRECKERS

Cornwall was said to be the home of 'wreckers', groups who intentionally lit false lights in order to cause shipwrecks. But were they fact, or fiction?

'Wreckers' were individuals said to place lamps on cliffs or beaches during terrible storms in order to purposefully wreck merchant vessels. While the crew drowned, the wreckers would wait patiently for the storm to abate and for the ship's precious cargo to wash ashore. Author Daphne Du Maurier even included wreckers in her quintessential smuggling novel, *Jamaica Inn*. However, the stories of these malevolent figures have been largely exaggerated and while attacks did occur, they were rare.

Instead, 'wreckers' were individuals who scoured the beaches following a disaster for any material that might be recovered. According to the National Archives, 'The Right of Wreck' franchise allowed landowners to recover various items from the sea. Landowners often feuded between who was entitled to the loot from which wreck.

When salvaging was eventually made illegal, the practice still continued – particularly in impoverished areas during the 18th century. The author Cathryn J Pearce in her work, *Cornish Wrecking*, successfully demonstrated that the typical wrecker was merely an average local who happened upon an opportunity and took it.



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on Galley and Chater while they slept and whipped and beat them savagely. The two men were then taken and tied to a horse and were forced to ride for five miles, being constantly whipped and beaten while they did.

Both met gruesome fates. Galley, discovered sitting upright in a grave with his hands held up to protect his face, was suspected to have been buried alive. Chater's death was equally horrific. First, Chater was slashed across the face with such force that his nose was severed and his eyes nearly popped out of their sockets. Then, he was hung from the top of a well but despite choking, he did not die. After cutting the rope, Chater fell into the well but still survived. The gang hurled rocks and stones on top of him until finally Chater's moans ceased.

These horrific murders would eventually mean the end of the Hawkhurst Gang's ruthless reign of terror. After Galley and Chater's bodies were discovered the authorities quickly set about apprehending the gangs leaders and, by 1749, all involved had been tried and executed.

But Galley and Chater's murder was only one example of the increasing violence involved with smuggling. In 1783, 24-year-old William Pitt became Prime Minister of Britain, still the youngest person to do so, and was quickly made aware of the huge problems the smugglers were causing. On the advice of Richard Twining, of Twinings Tea, Pitt introduced the Commutation Act that effectively put an end to the smuggling of tea by reducing taxation from 119% to 12.5%. Instead he raised funds by increasing the window tax, a tax on the number of windows or openings in a building that would not be repealed until 1851.

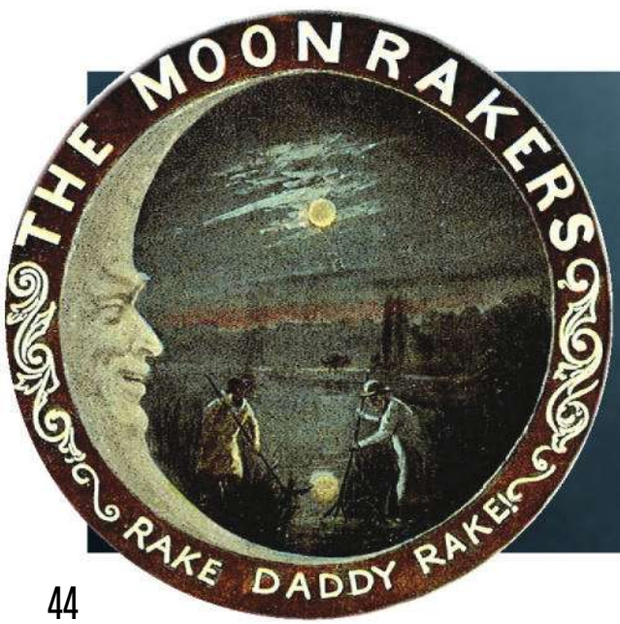
THE CORNISH SMUGGLERS

Yet, while tea may have been deemed no longer profitable to smuggle, there were still plenty of other items to trade. Although smuggling was rife across Britain as a whole, one area that gained a reputation for its involvement with the criminal enterprise was Cornwall. There are numerous tales of Cornish smugglers, but one in particular known for his ferocity was nicknamed 'The King of Prussia'.

"COPPINGER'S LOOT WAS SAID TO HAVE BEEN KEPT IN A MYSTERIOUS HIDDEN SEA CAVE, THOUGH NO TRACE OF IT HAS EVER BEEN FOUND"

"John Carter and his brother Harry were part of a notorious gang of smugglers who operated from Prussia Cove in Cornwall at the end of the 18th century," explains Jeremy Rowett Johns, a smuggling expert focussing on Cornwall and the village of Polperro. "The Carter brothers owned two large vessels each with a crew of around 30 men, which were involved in a number of battles with Revenue vessels."

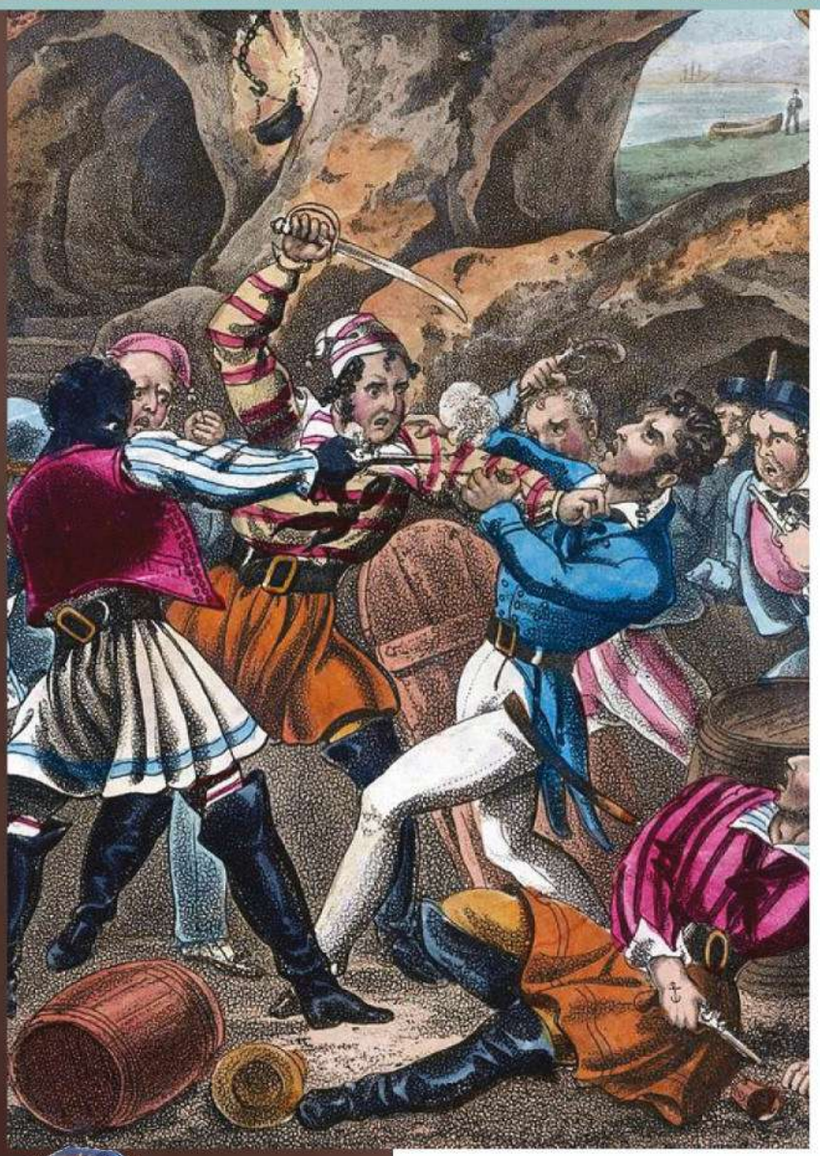
Prussia Cove was not the only smuggling hotspot on the Cornish coast and between 1775 and 1800, one small village became a smuggler's paradise. "In Polperro, a small fishing port in south-east Cornwall, it was continued on an almost industrial scale," Rowett Johns tells us. "It was highly organised by a man called Zephaniah Job – known as the 'Smugglers' Banker' – because of his ability to organise the payments to the Guernsey merchants and ensure that any Polperro fishermen



WILTSHIRE MOONRAKERS

A piece of smuggling folklore that gave birth to a local nickname

The quiet rural area of Wiltshire was once home to a rampant smuggling trade for gin and brandy. The smugglers would travel down to the South Coast where they would obtain the barrels of contraband. One folk tale describes how, upon returning to their village, a group of smugglers either by accident or intent hid the barrels in a small pond. One night they headed out with rakes in an attempt to retrieve the barrels. However, they hadn't counted on the roaming excisemen. Questioned and forced to think quickly, one of the smugglers pointed to the moon's reflection, exclaiming that he believed it to be a great cheese that had rolled into the lake and they were attempting to retrieve it. In the centuries since, as a result of this tale, 'Moonrakers' has become a popular nickname for Wiltshire locals.



TOP-LEFT *Smugglers* by George Ogilvy Reid from 1903

ABOVE Bloody battles were fought between the smugglers and excisemen

ABOVE-LEFT The Hawkhurst Gang tied both William Galley and Daniel Chater to the same horse, whipping them frequently

LEFT 'The Smuggler's Apprentice' steel sculpture in the coastal town of Scarborough

who were arrested were hardly ever convicted by a Cornish jury."

The smugglers of Polperro were highly efficient and vast amounts of contraband came ashore in its waters. "The village's isolated location also made it almost impossible for the revenue men to conduct a raid without the inhabitants being forewarned," says Rowett Johns. However, all good things must come to an end and eventually Polperro's smuggling empire collapsed. "It was the murder of a customs officer in 1798 that led to the crew of a Polperro smuggling vessel, the Lottery, being captured," Rowett Johns continues. "The conviction of one of the crew led to a Revenue preventive boat being stationed in Polperro Harbour. It was largely driven underground thereafter and never carried on as openly."

So powerful were some of the smugglers that they became legendary in their renown and were transformed into figures of folklore. 'Cruel Coppinger' is one such example. According to Zteve T Evans of Folklore Thursday, he is suspected to have been a real person – though his escapades were likely exaggerated over time. Coppinger is said to have arrived in Cornwall when his ship was wrecked off the coast. The story states that the locals saw a huge, lumbering figure thrashing about in the water until he strode ashore and stole a young local woman's horse – with her still astride it.

At first he forced himself into her household, though overtime he became softer towards her and they eventually married. Coppinger was suspected to have had Danish origins and quickly organised a notorious local gang of cutthroats and thieves. As his nickname suggests, Coppinger was known for his cruelty and his murderous approach to dealing with anyone who got in his way. Not content with the size of his operation, he also had a ship known as the Black Prince constructed for him in Denmark, which he used to attack ships in the English Channel and steal their goods. Coppinger's loot was said to have been kept in a mysterious hidden sea cave, though no trace of it has ever been found. There are numerous stories concerning Coppinger, though the validity of the majority of them remains unknown.

THE END OF THE SMUGGLERS

For decades smuggling persisted. During the Napoleonic Wars, smugglers continued to travel to Dunkirk and Gravelines where upon collecting their goods they were known to impart information to French spies. However, eventually during the mid-1840s, the lucrative enterprise finally came to an end. The establishment of the Coast Guard proved to be a lethal blow to the smugglers. Under their watchful eye, the shores of Britain were now defended and it became increasingly difficult to bring contraband ashore. In 1849, Parliament finally repealed the Navigation Acts allowing foreign trade into Britain's ports. Smuggling was no longer necessary and it quickly died out.

However, still to this day stories of smugglers remain popular. Jamaica Inn in Cornwall, an 18th century coaching inn, was well known for its connection to the smugglers. In 1936, celebrated author Daphne du Maurier used the inn as a setting for a novel of the same name, a dark Gothic tale of smuggling on the Cornish coast, which remains one of her best known works. Now, smuggling history is a profitable industry that attracts tourists from all over the world, coming to hear the dark tales of cutthroats and bandits who defied the law of the excisemen.

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VISIONS
OF

THE FUTURE

How did people from the past envision the world to come, and did their predictions come true?

Written by David J Williamson

Over the centuries many 'predictions' have been born out of the imaginations of creative minds: from a single disaster to the apocalyptic elimination of mankind, a dystopian society that turns the world upside down, or technological innovations that can either make the world a better place, or a living hell. From our standpoint of the present, it is easy to look back at these visionary works and judge their accuracy, but they should be understood and appreciated in the context of their own time. What was unbelievable but entertaining fantasy for 19th or 20th century audiences has, in some cases, eerie similarities to our present. Similarities we often overlook. Some may even have been inspired by these wondrous ideas, others are consequences of our actions. How close did these past visionaries get to the world as it is today?

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MODERN COMMUNICATION

GERNSBACK PREDICTS A REVOLUTION FOR MEDICINE

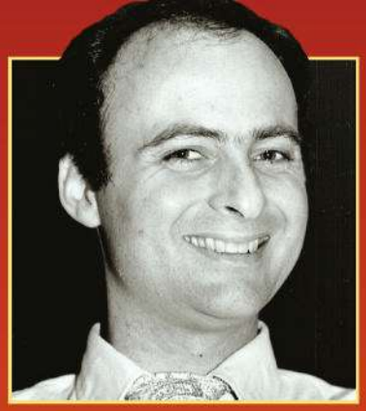
FROM: *RALPH 124C 41+*, 1911, BY HUGO GERNSBACK
AMAZING STORIES, EDITED BY HUGO GERNSBACK

Gernsback is often credited as the father of modern science fiction, after all the Hugo Award for science fiction is named after him. This is due to his wide-ranging publishing history with several pioneering magazines serialising fantastic tales about the future. Born in 1884, he taught himself electrical engineering while at university before moving to the United States. His professional passion became radio communication, having set up a radio supply house in 1905. So, when he released a story known as *Ralph 124C 41+*, it included a form of video communication he called the Teledactyl.

He envisioned this coming into use in 1975 and used by doctors to care for patients, even being able to interact physically through robotic arms. He was a little ahead of our technology (the first true remote surgery to be completed was in 2001), but remote surgeries are now possible through robotics and internet communication.

DID IT COME TRUE?

7/10



THE FUTURE WORLD

A NEARSIGHTED LOOK AT WHAT WAS TO COME

FROM: *EARTH*, 1990, DAVID BRIN

David Brin set his novel *Earth* almost 50 years into the future, and it carries a number of predictions that were to become reality far sooner than the writer envisaged. Brin predicted something very similar to the World Wide Web, for instance, which was only just getting off the ground. The system he envisaged was a global news and media network in which individuals could interact through discussion forums. He also foretold of the huge rise of email, and in particular spam email, that would regularly block the system. Tim Berners-Lee's proposal to CERN that began the internet was only submitted in 1989, so foreseeing how such mass communication could be used and abused is interesting. *Earth* goes on to address global warming, endangered species and refugee crises. It also explores artificially created black holes – a field that has had major breakthroughs in recent years.

DID IT COME TRUE?

9/10

DANGER ON THE SEA

DID THIS BOOK PREDICT THE TITANIC SINKING?

FROM: *FUTILITY*, 1898. MORGAN ROBERTSON

In the closing years of the 19th century the innovations made in sea travel saw the building of larger and more luxurious ships. Inspired by this progress, author Morgan Robertson based a disaster plot on such a vessel in his novella *Futility*. But it was a story that was to prove eerily accurate of future events. His book depicts a ship called The Titan, the largest passenger ship afloat, and its voyage on the lucrative transatlantic route to the United States. It carries the bare minimum of lifeboats and, when it strikes an iceberg and sinks in the North Atlantic, almost all of the 3,000 passengers are drowned. Robertson lived long enough to know of the Titanic's fate, and his re-released book was a best seller because of it. How was it so close? Robertson denied being clairvoyant, but he did have extensive knowledge of trends in naval vessel construction and the dangers of the Atlantic.

DID IT COME TRUE?

9/10

NEW MACHINES AND TECH

DA VINCI'S TANKS, AIRCRAFT AND MORE

FROM: *CODEX ATLANTICUS*, 15TH/16TH CENTURY, LEONARDO DA VINCI

Leonardo Da Vinci was an immensely talented artist, inventor, and visionary. Many of his ideas were, not surprisingly in the politically unstable world of the late 15th and early 16th centuries, related to war. Some were also hundreds of years before their time. Multi-barrelled cannon, armoured cars or tanks, and quick-assembly swing bridges to help armies rapidly cross rivers, were among the concepts he sketched. This more mechanised battlefield was many generations away. But in his massive volume of drawings – the *Codex Atlanticus* – there are other examples of uncanny vision. Some, like his one-man flying machine that mimics the movement of a bird, were not terribly practical. However, Da Vinci's design for what we would now call scuba diving apparatus is much nearer the mark. The diver would have a constant supply of air from the surface piped into a kind of helmet, with buoyancy aids to control his position in the water. Ideal for sabotaging ships, and two hundred years before the invention of the diving suit in the early 1700s. His plan for a type of parachute was, at first sight, thought to be completely unworkable until, in 2000, a copy was made and was found to work extremely well!

DID IT COME TRUE?

8/10

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RISE OF AI

ASIMOV'S CONCERNS OVER THE RISE OF THE MACHINES

FROM: *LITTLE LOST ROBOT*, 1947; *I, ROBOT* (COLLECTION 1950); *THE ROBOTS OF DAWN*, 1983, ISAAC ASIMOV

As early as the 1940s and 50s, Isaac Asimov speculated on the possibility of mankind losing control of AI – and robots in particular. He created the iconic Three Laws of Robotics to mitigate that eventuality. They were:

1) A robot may not injure a human being or, through inaction, allow a human being to come to harm.

2) A robot must obey orders given to it by human beings except where such orders would conflict with the First Law.

3) A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

From the *I, Robot* collection of short stories in 1950, including *Little Lost Robot* (from 1947), through to novels in the 1980s such as *The Robots Of Dawn*, Asimov conjured scenarios where such rules were broken or challenged, and the consequences that ensued. This inspired countless works of literature and film, such as *I, Robot* (2004) all the way to James Cameron's *Terminator* films. Meanwhile Fritz Lang's *Metropolis* (1927) poses a subtler use for AI, in infiltrating a worker's group to spread misinformation. He has the AI personified in a robot form, but it has odd parallels to modern bots on social media.

The debate on AI is very much to the fore today as technology becomes more sophisticated. However, the questions posed decades ago are as relevant and unanswered now as they were then.

DID IT COME TRUE?

5/10

TOTALITARIAN CONTROL

BIG BROTHER IS WATCHING IN THESE STORIES

FROM: *1984*, 1949, GEORGE ORWELL
FAHRENHEIT 451, 1953, RAY BRADBURY

One book that has become a byword for future dystopian states with control of its citizens, both mind and body, is *1984*. It depicts a regime in absolute control of the media, daily life, speech and movement. Orwell's depiction of propaganda, censorship and the dreaded 'Thought Police' can be likened to the Soviet State at the time of Orwell's writing in the late 1940s. But he was perhaps also warning us about the ways in which such policies could be used in democratic societies through fear and concerns for security. The ubiquitous use of CCTV today is often contrasted with Orwell's story. Censorship is also at the heart of *Fahrenheit 451*, although the solution is far more direct. Books are banned and, if discovered, the Fire Service will burn them. But Bradbury also gives us some insight into how technology may impact our behaviour in the future. Citizens tune out of their everyday lives through sounds in the 'seashells' they place in their ears, closing out the world to live in their own bubble. Cultural restrictions, state surveillance and social polarisation are all regular issues of concern in today's world.

DID IT COME TRUE?

6/10

POWER OVER BIOLOGY

CONTROLLING PEOPLE THROUGH POLICY

FROM: *BRAVE NEW WORLD*, 1932, ALDOUS HUXLEY
THE HANDMAID'S TALE, 1985, MARGARET ATWOOD

Unlike *1984*, Huxley's world of the future relies on the attainment of happiness and well-being as a means of controlling society. This is achieved through the constant distribution and consumption of a 'happiness drug' called 'soma', and the state support of free love. In this dystopian vision where technology has overtaken nature, babies are born using artificial wombs in 'hatcheries', the majority of women have been made infertile and children are indoctrinated into a severely structured class system to balance intellectual need with that of physical labour. Thankfully, still something far from our modern experiences.

In Atwood's dystopia, religious extremists, reacting to environmental change and dropping birth rates, have overthrown the United States to form Gilead. Women are the lowest class of society, are refused education, and must dress in a colour coded hierarchy of status. Drawing on a wide history of patriarchal, repressive regimes through history, *The Handmaid's Tale* was a reaction to the religious right in the US in the 1980s. Both books paint dire images, one of a society progressing incredibly fast and losing some of its humanity, and the other regressing into religious extremism.

DID IT COME TRUE?

3/10

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NEW FRONTIERS

VERNE'S VISION OF HUMANITY IN SPACE AND THE SEA

FROM: *FROM THE EARTH TO THE MOON*, 1865, JULES VERNE
20,000 LEAGUES UNDER THE SEA, 1870, JULES VERNE

The name Jules Verne has become synonymous with an ingenious mix of romantic adventure and technological vision. With a personal curiosity in science and geography, Verne began writing stories of adventure inspired by the technological advances of the mid- to late-19th century. In *From The Earth To The Moon*, Verne's heroes are blasted into space using a giant cannon. While this drew on the most advanced technology of his era, his calculations are thought to have been surprisingly close for getting a craft into space. A launch from Florida, and the use of special suits in the environment of space were both predicted by Verne, along with an ocean splashdown for returning spacecraft. He also expressed a view that one day spacecraft could be powered by light and solar panels are used on many missions today. A submarine is at the heart of *20,000 Leagues Under The Sea*; there had been attempts at creating a viable submarine long before Verne's book, but they were either incredibly small – literally a one-man vessel – or they suffered from design faults making them impractical. Verne's cylindrical concept was to pave the way for the efficient and workable shape that was to develop throughout the 20th century into the vessels we see today.

DID IT COME TRUE?

6/10

NUCLEAR AGE

HG WELLS SAW THE ATOM AS THE KEY

FROM: *THE WORLD SET FREE*, 1914, HG WELLS
THE SHAPE OF THINGS TO COME, 1933, HG WELLS

HG Wells is known for *The Time Machine*, 1895, and *The War Of The Worlds*, 1898 – both deal with the fate of human kind in different ways, but it is in some of his lesser known works that Wells proved to be much more prophetic. Wells was deeply interested in technology and science and in his work *The World Set Free* he predicts that the power of the atom will be harnessed in the year 1933. Eerily that very year Leo Szilard put forward the theory of nuclear chain reaction. Wells also predicted the discovery would lead to the use of atomic weapons, albeit on a small scale, which would leave battlefields radioactive and desolate. War and a new world order were also the focus of his 1933 book *The Shape Of Things To Come* (inspiring the 1936 movie, *Things To Come*). A new world order ruled by elite pilots and their aircraft follows a terrible war in which 'aerial torpedoes' (what we might call cruise missiles) as weapons of mass destruction are launched from submarines. Even though technology was developing with frightening speed when Wells was writing this, his vision of atomic weapons and cruise missiles was a vision decades before its time.

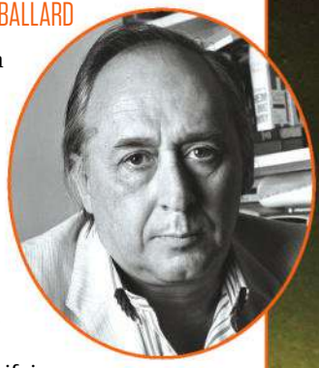
DID IT COME TRUE?

5/10

CLIMATE CRISIS

JG BALLARD FEARED OUR IMPACT ON THE WORLD

FROM: *THE WIND FROM NOWHERE*, 1961; *THE DROWNED WORLD*, 1962; *THE BURNING WORLD*, 1964, JG BALLARD



Mankind's impact on the planet is all too real, but the early visionary works of JG Ballard in the 1960s ring eerily true, albeit with things turned up to extremes. In *The Wind From Nowhere*, changes to weather patterns result in terrifying hurricanes that demolish civilisation. *The Drowned World* depicts a planet of increased temperatures and sea levels so high only the Poles are habitable. And in *The Burning World* (also released as *The Drought*), industrial waste in the oceans has interfered with the natural cycle of evaporation, rain is non-existent and water a precious commodity in a world of global warming.

There continues to be debate around the severity of the current climate crisis. In all of these works we see humans forced to adapt to a vastly changed environment, a message that resonates with many in the here and now, preparing for what may already be inevitable.

DID IT COME TRUE?

7/10

Bess of Hardwick

ELIZABETH'S NEMESIS

Who was the ambitious Tudor noblewoman who proved to be a thorn in Gloriana's side?

Written by Emily Staniforth

No, that's not a portrait of Queen Elizabeth I, although she does look very similar. This fiery red hair, pale skin and haughty expression in fact belong to another of Tudor England's most prominent women. Elizabeth Cavendish, more commonly known as Bess of Hardwick, who led a remarkable life for a woman in the 16th century, enduring tragedy and hardship with a defiant attitude that would see her become the second richest woman in England after Gloriana herself. But her success was not straightforward and many of her calculated decisions put her at odds with Queen Elizabeth, making her life precarious and, at times, dangerous. However, even before Elizabeth became queen in 1558, Bess was striving to better her life. From as young as 16 she began building her individual wealth and forging connections with the rich and powerful.

From modest beginnings

Bess was born Elizabeth Hardwick sometime between 1521 and 1527 to parents John Hardwick and Elizabeth Leeke. The family estate at the time of Bess' birth was Hardwick Hall in Derbyshire, a humble manor house that had been the Hardwick family property since the 13th century. Though their estate had lots of land, the family finances were not as healthy as their holdings would suggest and when Bess' father died in 1528 the situation worsened. Bess only had one brother out of her six siblings, and he was two at the time of his father's death. Therefore, as the law dictated at the time, young James Hardwick became a ward of the king. A third of John Hardwick's wealth eventually passed to his

All images: © Alamy, © Getty Images

widow and the other two thirds was held by the Court.

Now supporting her four daughters (one had died after her father's death), Elizabeth Hardwick remarried. Biographies of Bess suggest that at around the age of 12 she was sent away to live in the home of a family of higher standing. There Bess had better marriage prospects than if she had remained at home. At around age 15, she married her first husband. Robert Barlow was a member of the gentry and was only 13 at the time of their union. However, the marriage would not last long as Barlow died around a year after their wedding. Bess had outlived her first husband.

The black widow

The death of Bess' first husband was the beginning of a pattern, with all of her husbands dying before her. Though this sounds like a series of tragedies for Bess, and on a personal level it almost certainly was, the deaths of her subsequent husbands would help Bess reach a level of wealth and status that was extraordinary for a woman of her time.

After being widowed for the first time, Bess' next marriage saw her paired with an older man. At 20 years her senior, Sir William Cavendish was quite the catch in terms of securing Bess a place in Tudor high society. It is likely that they first met while Bess was employed as a lady-in-waiting to Lady Frances Grey, the Marchioness of Dorset and niece of Henry VIII. Cavendish was a politician and had been a familiar face at the court of Henry VIII. In his role as a clerk to the king's influential chief minister Thomas Cromwell, and commissioner of the king during the Dissolution of the Monasteries, William Cavendish was a well-connected man of means.

The marriage of Bess and William Cavendish seems to have been a happy one. In the ten years they were married, Bess gave birth to eight children. Bess and William, both intent on climbing the social ladder of the Tudor upper classes, shrewdly chose each child influential godparents, including several members of the Grey family who were cousins of the Tudors, creating a web of connections at the Tudor court that could prove beneficial in theirs or their children's later lives. Young Henry Cavendish, the couple's third child and first son, became the godson of Princess Elizabeth. Though it was not a foregone conclusion at the time of Henry's birth in 1550 that Elizabeth would one day inherit the throne, she was the half-sister of the reigning king Edward VI and thus a very high ranking woman indeed. Bess clearly saw the advantages that a closer proximity to the royal princess held. There appeared to be no bad blood between Bess and Elizabeth in their younger years.

> "BESS CLEARLY SAW THE ADVANTAGES THAT A CLOSER PROXIMITY TO THE ROYAL PRINCESS HELD"

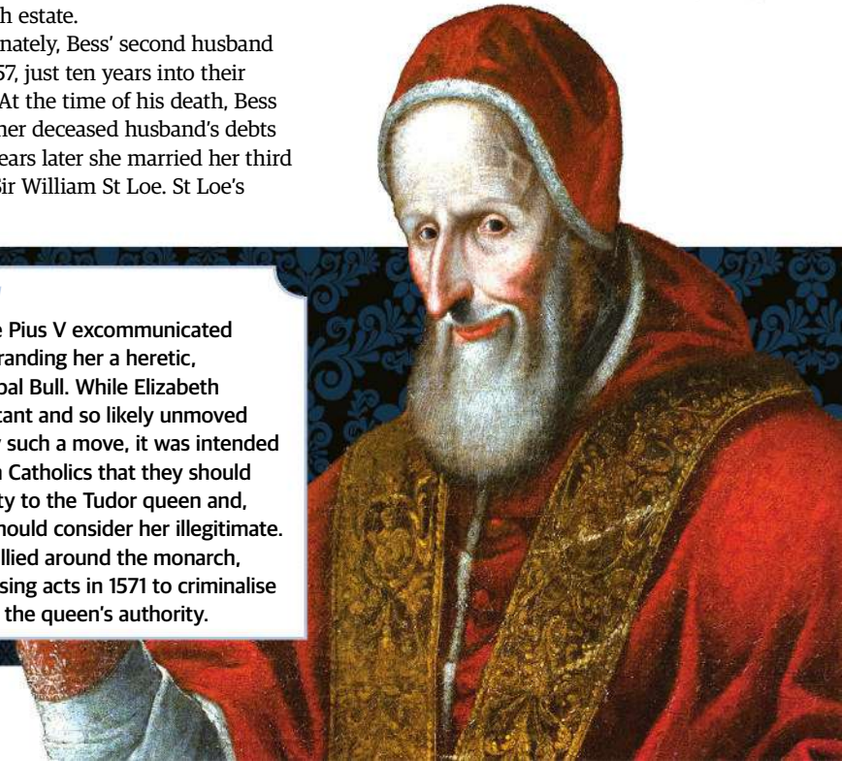
For the majority of their marriage, Bess and William lived together in Derbyshire. Soon after their wedding, Bess had convinced her husband to sell his own lands and use his fortune to purchase Chatsworth Manor in her home county. This decision shows the kind of woman that Bess was: though William was her superior in age and status, it is clear that Bess was not about to let herself and her desires be walked over in order to appease her husband. Together, the pair financed and oversaw extensive work on the Chatsworth estate.

Unfortunately, Bess' second husband died in 1557, just ten years into their marriage. At the time of his death, Bess inherited her deceased husband's debts and two years later she married her third husband Sir William St Loe. St Loe's prosperous financial status would certainly have been an attractive prospect to the indebted Bess, and his status within the royal court would also surely have interested her. With Mary I having died in 1558, her younger sister, Elizabeth, had inherited the Crown. St Loe was rewarded for previous loyalty he had shown to Elizabeth and appointed Captain of the Guard and Chief Butler of England. Bess' marriage to St Loe, therefore, put her firmly in Elizabeth's circle of trusted friends, allies and advisors. She was made a lady of the bedchamber to the queen shortly after her marriage. However, Bess' ambition and close associations with the troublesome Grey family would see any potential friendship begin to sour.

St Loe died in 1565, leaving Bess the entirety of his vast estate. There have been various estimates as to the extent of Bess' personal wealth after the death of her third husband, with most approximations suggesting that her annual income would have amounted to upwards of £17 million in today's money. She was the second wealthiest woman in the country after the queen herself. From this point in her life, Bess could have lived as an independent woman if she had wished to do so. But, Bess' resources also gave her power, making her a threatening presence for the queen. Bess' decision to marry for a fourth and final time could have been due to the fact that she had recently found herself in hot water with the queen, and had been dismissed from her position at court.

Elizabeth vs Elizabeth

Bess' continued friendship with the Grey family was behind her first run-in with Queen Elizabeth. Lady Katherine Grey



More of Elizabeth's enemies

Gloriana had plenty of adversaries to worry about

POPE PIUS V

In 1570, Pope Pius V excommunicated Elizabeth I, branding her a heretic, through a Papal Bull. While Elizabeth was a Protestant and so likely unmoved personally by such a move, it was intended to tell English Catholics that they should hold no loyalty to the Tudor queen and, potentially, should consider her illegitimate. Parliament rallied around the monarch, however, passing acts in 1571 to criminalise challenges to the queen's authority.

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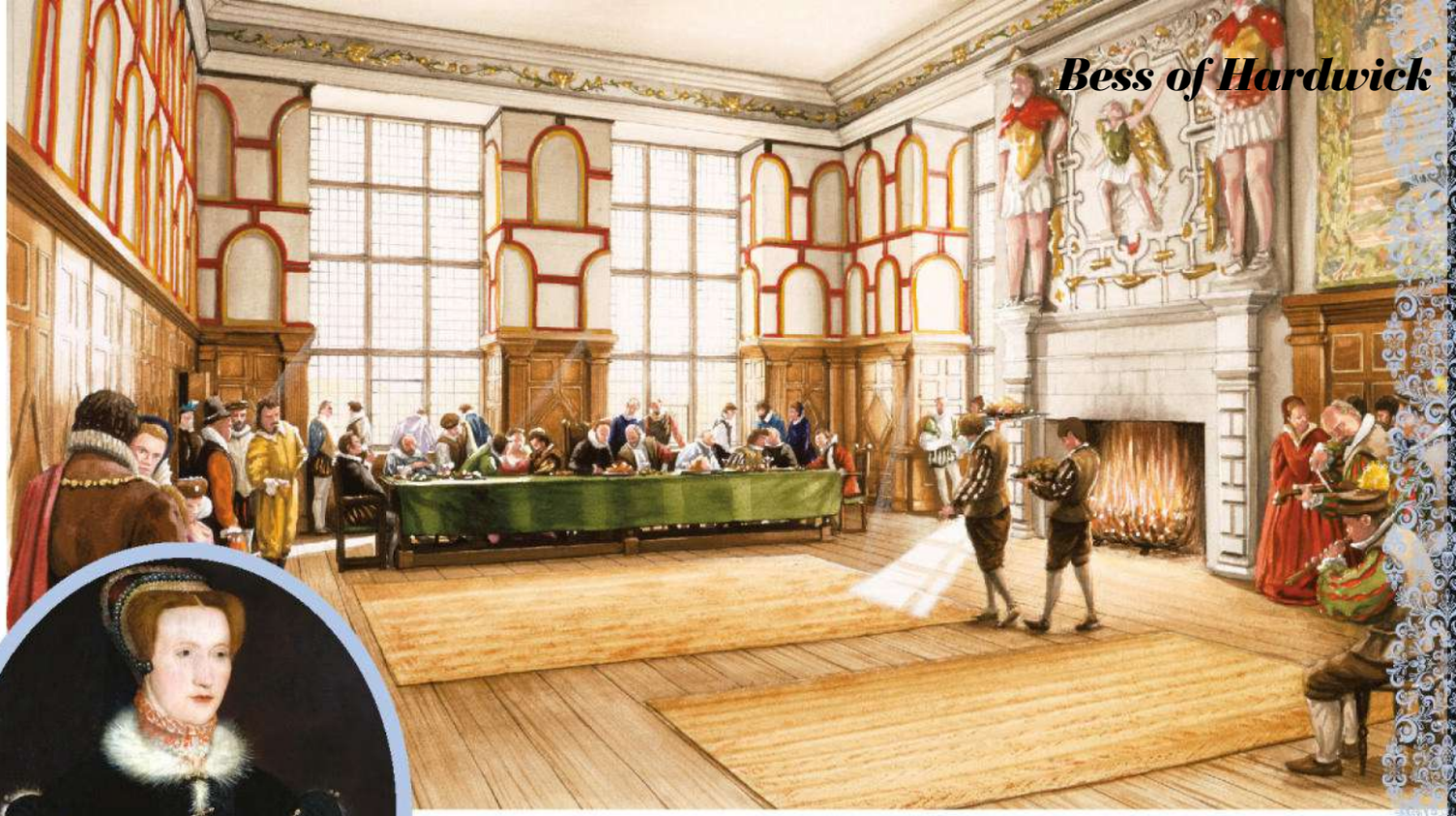
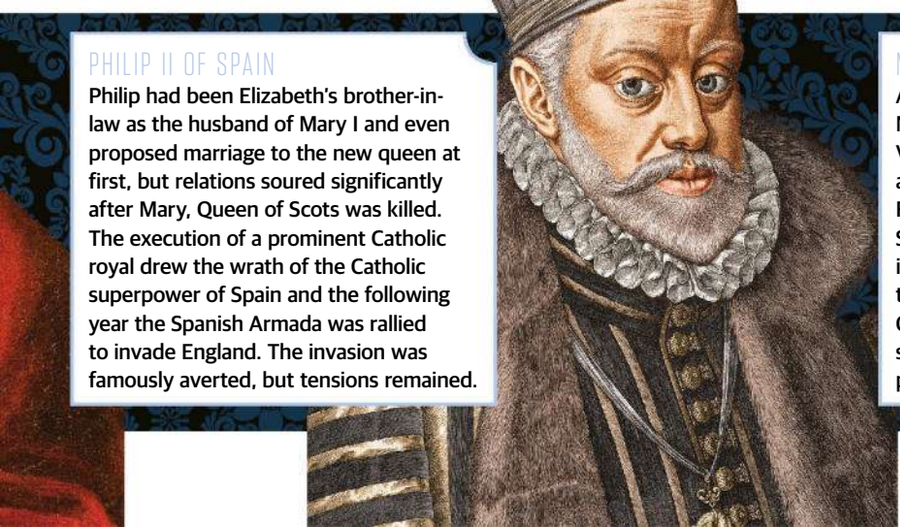


ABOVE A portrait of a younger Bess

ABOVE-RIGHT A recreation of Bess hosting in the Great Chamber of the Old Hall at Hardwick

RIGHT The ruins of Old Hardwick Hall, where Bess was born, overlooking the New Hall which she began building in 1590

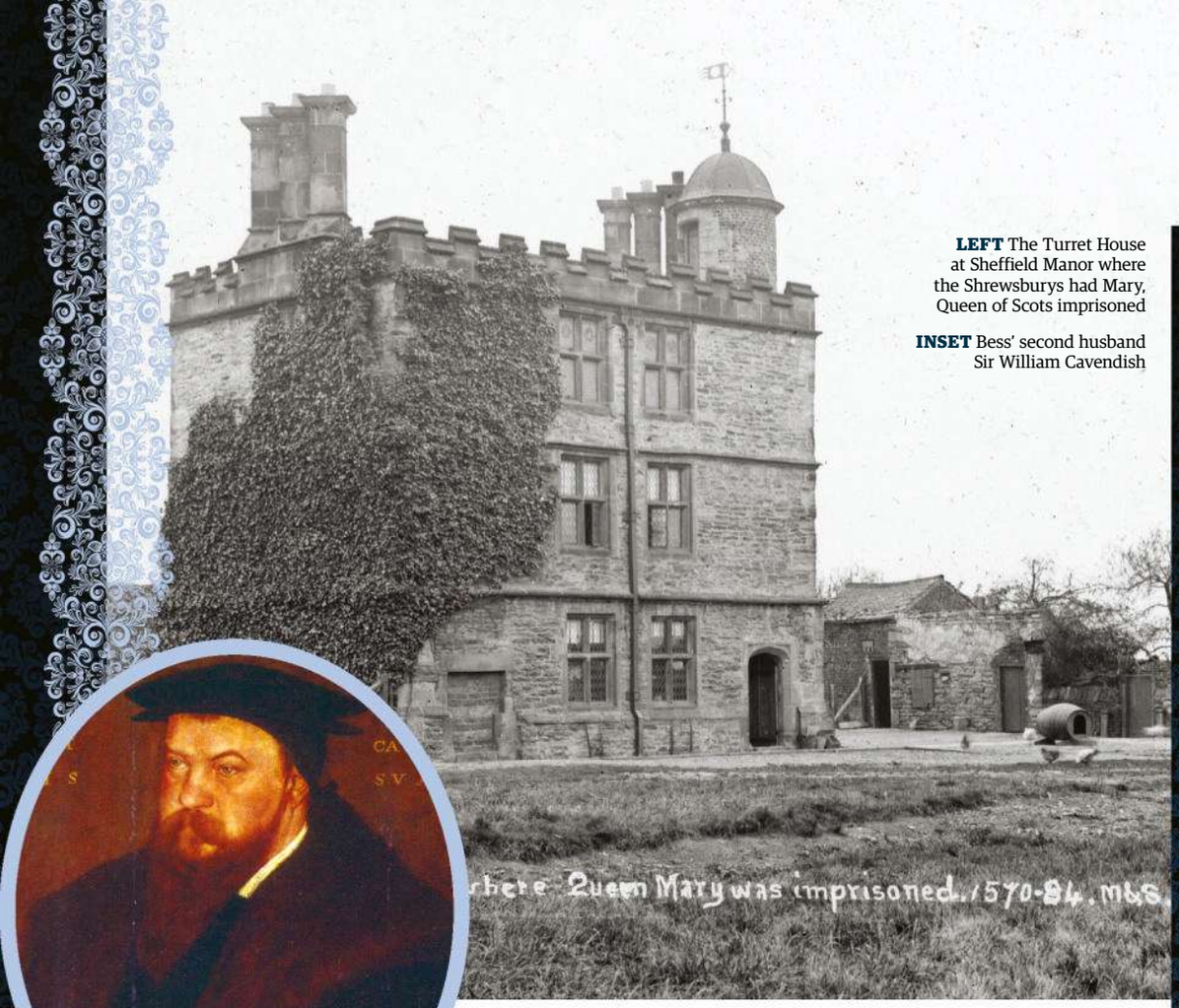


PHILIP II OF SPAIN

Philip had been Elizabeth's brother-in-law as the husband of Mary I and even proposed marriage to the new queen at first, but relations soured significantly after Mary, Queen of Scots was killed. The execution of a prominent Catholic royal drew the wrath of the Catholic superpower of Spain and the following year the Spanish Armada was rallied to invade England. The invasion was famously averted, but tensions remained.

MARY, QUEEN OF SCOTS

As the granddaughter of Margaret Tudor, older sister of Henry VIII, Mary was Elizabeth's cousin, but also a potential heir to the throne. From 1561, the Catholic queen ruled Scotland and began to be embroiled in the religious and political schisms taking place south of the border. Caught up in plots against Elizabeth, she was eventually executed for plotting against the queen in 1587.



LEFT The Turret House at Sheffield Manor where the Shrewsburys had Mary, Queen of Scots imprisoned

INSET Bess' second husband Sir William Cavendish

was Elizabeth's cousin and, according to the will of Henry VIII, was a serious contender and possible legitimate heir to the throne.

Therefore, Elizabeth kept an eye on Katherine's activities and so when she married without royal permission, Queen Elizabeth was furious. This was bad news for Bess because, as a confidante of Katherine, she allegedly knew of the marriage and had failed to bring it to the attention of the queen. There are conflicting contemporary accounts of the punishment Bess received for her betrayal of the queen, with one having stated that Bess was thrown into the Tower of London alongside Katherine. However, another source tells us that while the queen was angry with Bess, questioned her and dismissed her as a lady of the bedchamber, her rage eventually subsided and Bess faced no further consequences.

Either way, Bess' involvement in such a scandal may have prompted her to seek out a marital match that would help to bolster her reputation. With her last husband, she hit the jackpot - George Talbot was a bona fide English aristocrat with an impressive lineage. He was also the 6th Earl of Shrewsbury and so by marriage Bess became a countess. This new match put Bess back in the game and soon her and her husband were trusted with a matter of the utmost importance to the queen. After Mary, Queen of Scots, Elizabeth's cousin and rival to the throne, had been forced to abdicate her Scottish throne and been accused of aspiring to take the English Crown for herself in 1568, the queen entrusted custodianship of Mary to the Earl of Shrewsbury, and therefore Bess. Mary was effectively kept under house arrest by Shrewsbury at his and Bess' homes, including Bess' beloved Chatsworth as well as Sheffield Manor.

The marriage between Bess and the Earl suffered as a result of Mary's placement with them. Both parties struggled with the financial strain the responsibility put on them, as well as the pressure the role inevitably brought with it. Proximity to the deposed Scottish queen was precarious, and with Bess having already been questioned once for betraying the Virgin Queen, walking the tightrope between spending a lot of individual time with Mary, which could give rise to gossip, while simultaneously staying on the right side of Elizabeth, cannot have been easy for either party. The pair became distant from one another and the situation was made worse when Bess' scheming put her at odds with the queen once again.

Already aware of Elizabeth's reactions to unsanctioned marriages, Bess nevertheless sought to wed her daughter, Elizabeth Cavendish, to Charles Stuart, the brother of Mary, Queen of Scots' second husband and uncle to her son James VI of Scotland.

Bess the builder

The lasting legacy you can still visit today

Becoming one of the richest women of the era, Bess of Hardwick invested in property, leaving behind two buildings that survive to this day and are incredible examples of Tudor architecture. In 1549 she bought the Chatsworth estate in Derbyshire, with her then husband Sir William Cavendish. In her subsequent marriages, Bess retained control of this estate and financed significant remodelling projects to make it what it is today.

Having moved back to Chatsworth from 1584 as her fourth marriage broke up, she then decided to return to her birthplace of Hardwick in Derbyshire where her family had a modest estate. This was gradually transformed into Hardwick Hall as we know it now, starting with an enlarged manor in 1590. After her husband died, she invested her increased inheritance on further building, including a new hall, completed in 1599, with impressive windows. The old and new halls were in development together, allowing for a complementary design.

ABOVE Bess' impressive collection of tapestries and portraits still line the walls of the Long Gallery at Hardwick Hall

RIGHT Bess made Princess Elizabeth the godmother to one of her children

The marriage went ahead in secret in 1574 but, of course, the queen found out. Enraged by the actions of the newlyweds' mothers for arranging the match, Elizabeth had Stuart's mother, Margaret Douglas, imprisoned in the Tower of London. Again there are conflicting accounts of what exactly happened to Bess and it is possible that she too was thrown into the Tower for a period. Having trusted Bess to guard Mary, Queen of Scots, the betrayal and deceit must have been a slap in the face for the queen. It does not seem as though Shrewsbury had been aware of his wife's clandestine matchmaking.

"SHE WAS THE SECOND WEALTHIEST WOMAN IN THE COUNTRY AFTER THE QUEEN HERSELF"

Elizabeth Cavendish and Charles Stuart had a single child: a daughter named Arbella. Arbella Stuart's existence was a threat to Elizabeth I's throne as she was a descendent (through her father's line) of Henry VII and thus a prime candidate to be named as Elizabeth's successor, or even her replacement. With ambitious Bess as a grandmother, however, Arbella's life was focused on becoming a suitable heir. Elizabeth therefore continued to keep an eye on Bess' aspirations for her grandchild, particularly when she became Arbella's guardian after both of her parents died. Bess, from that point, was never not under suspicion. Her ambition for her granddaughter, however, did not sit well with Arbella who grew to resent the way she was treated by her grandmother. When Elizabeth died in 1603, it was James VI of Scotland who succeeded the Virgin Queen and so Bess' vision never came to be. The relationship between Arbella and Bess continued to deteriorate until Bess eventually disinherited her.

A lasting legacy

Bess of Hardwick achieved an extraordinary amount for a woman in Tudor England. Though her relationship with the Earl of Shrewsbury soured and she moved out of their shared home in 1584 to Chatsworth, she continued to aspire to great things. She had purchased the land of her old family home at Hardwick from her brother in 1583 and set about completing a project that would cement her legacy as a powerful woman. She began to transform Hardwick manor house into a grand and modern home, which is now known as Hardwick Old Hall. The Earl of Shrewsbury died in 1590 and Bess inherited his wealth. This meant that she could expand her architectural ambitions and started to build a new home on the grounds of Hardwick. Hardwick Hall was completed in 1597 and is one of the finest country houses from the Tudor era to still exist. It remains her greatest visible legacy – a visual representation of her wealth, status and ambition. Just to ensure everyone knew that she was the owner and builder of such an impressive house, Bess had the initials ES for Elizabeth of Shrewsbury carved into Hardwick's facade.

Although Bess' attempt to have her descendent on the English throne was never realised in her own lifetime, she did have a lasting impact on English royal lineage. Through her son, Charles Cavendish, Bess is a direct ancestor of the late Queen Elizabeth II, another exceptional and defiant woman who shares her name.

Bess was lucky in that she was never dealt with more harshly by Elizabeth, but she surely proved to be a dangerous foe and a worthy opponent of the Tudor Queen. If it was not for Bess' far-reaching aspirations, it is possible that the two women may even have been friends who admired one another. But Bess' headstrong nature would never have been content with a place in the background of history. As a woman who negotiated and navigated her way through a turbulent political environment from poverty to becoming England's richest noblewoman, she was a force to be reckoned with.

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"IT'S IMPORTANT THAT BLIND AND VISUALLY IMPAIRED PEOPLE OWN OUR OWN HISTORY"

© Zoe Norfolk

EXPERT BIO

SELINA MILLS

Selina Mills is an award-winning writer and broadcaster. She has worked as a senior reporter and broadcaster for Reuters, *The Daily Telegraph*, and the BBC.

Blindness and blind people have usually been framed in history as inspirational or tragic, but now Selina Mills wants to question that narrative

Interview by Emily Staniforth

When looking at the history of blindness and those with visual impairment, it is not very common to come across writers and historians who have themselves experienced sight loss. This is something that journalist Selina Mills wants to change. Having spent ten years writing *Life Unseen: A Story Of Blindness*, a part memoir, part historical journey that charts blindness through the ages, Mills' new publication aims to establish how blindness has been perceived throughout history and where our modern notions of blindness have come from. We sat down with Mills to discuss her new book, her own feelings towards discussions around sight loss, and her research into the past.

Why did you decide to write Life Unseen: A Story Of Blindness, and how would you describe the book?

I was fed up with reading extreme polarised depictions of blind people: either they were superstars or they were burdens and impoverished and I thought "that's not me". There are all these modern biographies about people climbing Mount Everest and I'm just here getting up and trying to go to work with all the obstacles that entails. There are dangerous repercussions of those extreme portrayals which are all put onto blind people.

Teiresias, the blind seer of Greek mythology, is a common figure in Greek tragedies and legends

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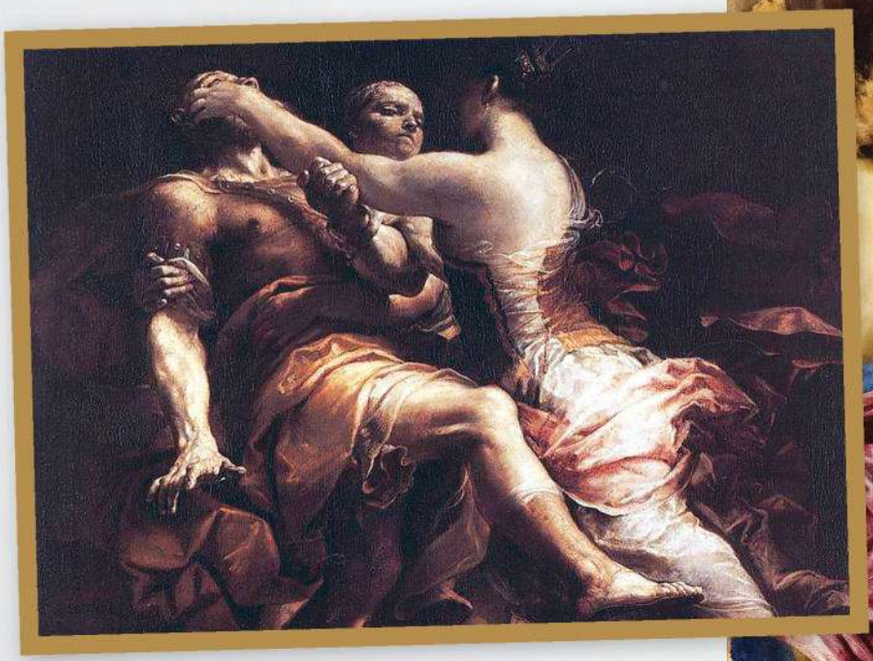

I'm visually impaired and legally blind, and my friends who are completely blind say the same thing. I wanted to correct the dial a little bit. I also wanted to counter the rather endlessly enthusiastic sighted historians who had written all the books about blind people, aside from one or two exceptions. History has been written from a very visual point of view about lack of sight as a deficiency. But what if blindness is more of a descriptor, then maybe we don't have to make it a melodrama? I say this with caution because, obviously, it can be a trauma and a very frustrating situation if you suddenly lose your sight, but I still want to correct the extreme versions that have been depicted for the past thousand years.

One of the reasons I wrote the book in the way that I've written it as part memoir is because it is really hard to read all of this trauma. There is so much that is sad and isolating and if you think about how people have been treated over the centuries, it's not an easy read. I wanted a sort of humanity and emotionality that allowed readers to think about how this is not just historical fact, but lived experience.

"SINCE THE BEGINNING OF TIME WE HAVE SHOWN INTEREST IN BLINDNESS"

In what ways has blindness usually been discussed within a historical context?

In each epoch we have attached whatever that era was interested in onto blindness. We project the notion of blindness as a metaphor and a symbol, and it's usually very little to do with the person not seeing. For example, blindness had a particular resonance in classical times. The great classical writers all used blindness as metaphor. There are characters that are blind like Teiresias, who can see into the future. He was punished for abusing his visual gifts after looking at Athena in the bath. At the other end you've got Oedipus and Hecuba and big characters that have either gouged their own eyes out or gouged other people's eyes out. The good news is that recent research by writers like Martha L Rose in *The Staff Of Oedipus* started looking at the lives of ordinary blind people in this era rather than the fictional characters. Blindness is depicted in classical literature as high drama, but maybe day-to-day life was not so tragic. Apart from votives (an object offered in fulfilment of a vow) and temples to eyesight, which we certainly know existed, we don't really know what daily life was like.

Then you've got other eras. I started digging and looking at medieval history and aside from the fabulous nuns, there are plays and French farces from the 13th century, one of which is called *Le Garçon et l'aveugle* which was performed all over Europe. It set up this idea that blind people were stupid, greedy and taking advantage of the sighted world. Add to this the suspicion that blind people were secretly the Devil, there was a constant depiction of blindness that suited the era.

There is also a religious aspect of blindness, particularly in Christianity, with Jesus curing blind people. This was miraculous as blindness was considered so terrible, so there is a repetitive narrative of sight being good and blindness bad. Interestingly though, Jesus's philosophy is far thinking because he states that blindness is not a repercussion of past behaviour or sinning. He changed the pity narrative to say that we embrace everybody, and we take care of everyone.

In the 21st century, I think we attach to blindness our obsession with tech to make our lives easier. Almost every time I get in a taxi or on a bus I'm asked if I've had laser treatment or got all these new apps or if I've heard of driverless cars. There's this notion that we can fix and cure, which was an 18th century idea, and that tech is the answer and blindness itself must not exist. The overarching themes through time, I would say, are always inspiration on one end and tragedy on the other with different nuances in each era.

For how long have people considered blindness as a problem to be solved?

Since the beginning of time we have shown interest in blindness. Historians have discovered early papyrus scrolls in Egypt, which say you should squeeze the blood of a pigeon's liver or kidney over the eyes of someone with night blindness. The unexpected thing is that it did help because it had a certain vitamin in it and night blindness can be caused by a lack of that vitamin.

But we could go even further back. An archaeologist told me about Nandy the Neanderthal. Archaeologists found in Nandy's eye sockets the remnants of a disease that certainly would have

ABOVE-LEFT In a Euripides play, Hecuba blinds Polymestor in revenge for killing her son

ABOVE *The Miracle Of Christ Healing The Blind*, a painting by El Greco

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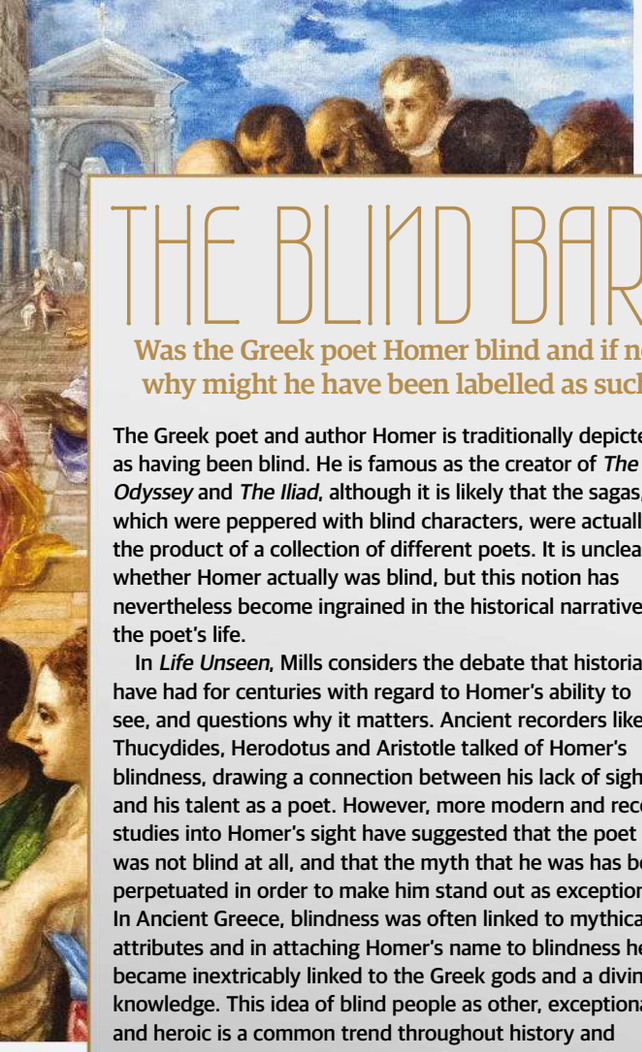
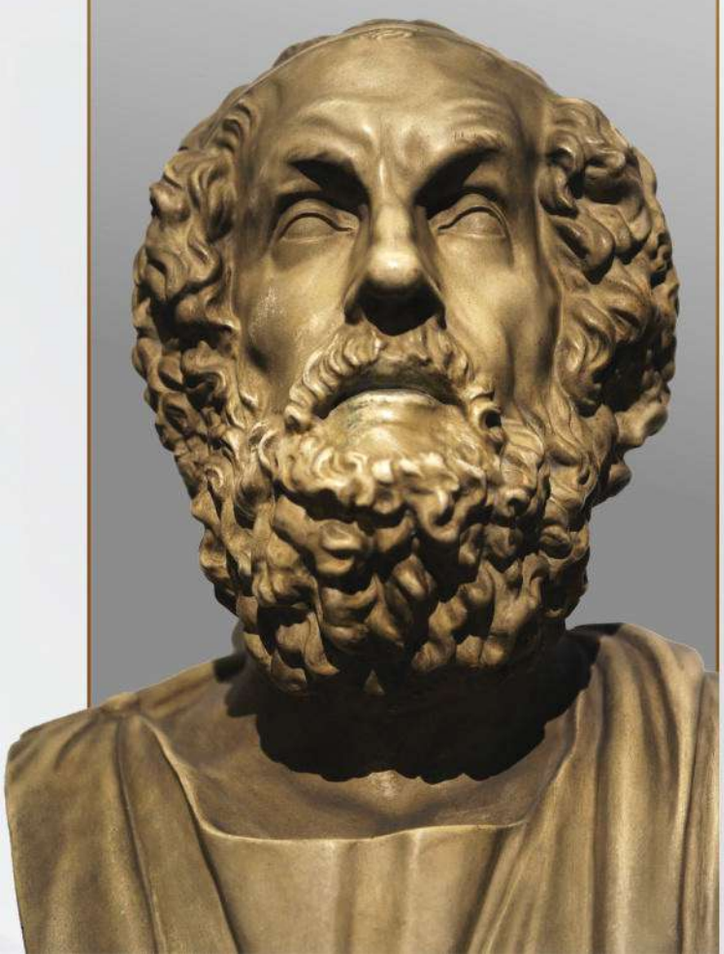


THE BLIND BARD

Was the Greek poet Homer blind and if not, why might he have been labelled as such?

The Greek poet and author Homer is traditionally depicted as having been blind. He is famous as the creator of *The Odyssey* and *The Iliad*, although it is likely that the sagas, which were peppered with blind characters, were actually the product of a collection of different poets. It is unclear whether Homer actually was blind, but this notion has nevertheless become ingrained in the historical narrative of the poet's life.

In *Life Unseen*, Mills considers the debate that historians have had for centuries with regard to Homer's ability to see, and questions why it matters. Ancient recorders like Thucydides, Herodotus and Aristotle talked of Homer's blindness, drawing a connection between his lack of sight and his talent as a poet. However, more modern and recent studies into Homer's sight have suggested that the poet was not blind at all, and that the myth that he was has been perpetuated in order to make him stand out as exceptional. In Ancient Greece, blindness was often linked to mythical attributes and in attaching Homer's name to blindness he became inextricably linked to the Greek gods and a divine knowledge. This idea of blind people as other, exceptional and heroic is a common trend throughout history and continues to contribute to the way historians and others perceive and write about the past. However, as Mills highlights, what if you are someone with a visual impairment who is ordinary? Does the hero status historians have attached to talented blind people from the past change the way you are seen by the rest of society?



ABOVE A 19th century painting of a *Blind Beggar* by Francesco Ferrari

rendered him blind. He also had a withered leg so we know he was quite disabled. The DNA showed he was 45 when he died and yet the other skeletons around him died when they were 28.

It begs the question: why and how did he survive? The archaeologist I spoke to made the claim, which I don't necessarily agree with, that someone must have taken care of him. But how do we know that? That's us presuming everyone would have been kind and caring. But what if it was simply that he was greedy and grungy and maybe he was really funny, and people just brought him food and he lived quietly by the Tigris River? What if because he wasn't hunting and he wasn't out and about getting munched by lions and tigers, maybe he just survived? I'm cautious to impose my notion of caring and kindness onto archaeological evidence, but we do know that Nandy survived. Carbon dating showed he lived 45,000 years ago. It cheers me up because we blind folk have all been here for a while. It's not like blind people suddenly popped up. Blind people are part of human history.

In writing Life Unseen, were there any historical figures whose life and experiences with blindness you particularly resonated with?

I think finding blind women was the best thing. Finding Maria Theresia von Paradis really did help me because she was as famous as Mozart, she was incredibly talented, she made money from making music and she died wealthy. I think von Paradis was the first person who really made me think that this wasn't a fruitless enterprise. Von Paradis had a lot of medical treatment and it really upset me thinking about how this woman had

gone through such awful treatments. Her head was bandaged up, she had electrodes put on her eyes, she had leeches on her back and they cut her. Maybe that's my 21st century reaction to it, but we know that she hated it because her doctor said that she was insanely in pain from all the treatments. I thought she was successful and talented. I'm sure she was understood as inspirational, although I didn't feel that about her. She invented raised maps and she got silk scarves and put knots in them to learn the key changes. She was privileged and she had an education so those two things will totally shift your chances, but I really liked that she existed.

The other person I really loved was the 19th century philanthropist Elizabeth Gilbert, who was nicknamed Bessie. She was blind, privileged, had access to education and had a bit of money. Bessie was raised like her other sisters, dressed herself and

"BLIND PEOPLE ARE NOT CONFINED TO THE CORRIDORS OF HISTORY"

took herself out and about. She had chances that, again, most of the women of her era did not have. She learned to write between two boards and she wrote to her father about there being very little chance that she would get married, but that she would use her inheritance to do something for other blind people. Bessie went off and started a charity and got the backing of Queen Victoria and Benjamin Disraeli. It was called Clarity and it was a cooperative, so everybody had a stake in it. The charity made baskets, brushes, stools and wooden products in Holborn, London. There was a Braille library, a choir and a pension pot – it was so well thought out and it was owned and worked by blind people. It centred around work ethic and the charity put the money it made back into housing and food. I think she was very much part of her era in terms of philanthropy. There were something like over 600 or 700 charities for blind people in Britain in the 19th century, but Bessie did something that included the blind people themselves.

If you could choose any era to live in as a visually impaired person, when would you choose?

I would certainly say my own era. Maybe being a posh blind nun in the medieval era would be interesting. If I was educated and thoughtful, I would go to a convent or an abbey. There were a few blind nuns who became abbesses and they had people to read for them. I think the 19th century would be hell on Earth – the 1834 Reform Act made being blind much harder because it created institutions like the workhouse. You would have to prove that you were capable. Unless you were like Bessie and you had money, you had no chance. You were sent off to an institution and there were some really horrible labels associated with blind people. The notion of the beggar is 'formally' attached to blindness very much in the 19th century. The Reform Act got rid of the Elizabethan Poor Laws which said that you must look after the blind, the deaf and the dumb in this list of infirmities and disabilities. But then there was this idea in the 19th century, led by Malthusian theory, that people shouldn't be looking after the burdens of society. I feel like there's still a sniff of it around now with the idea that blind and disabled people are scroungers and taking advantage. In the book I write about being accused of faking it myself and that happens all the time.

What impact do you hope that Life Unseen will have on the way people consider visually impaired people from the past and in the present?

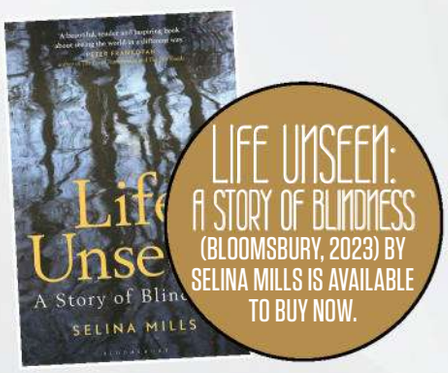
I hope it helps sighted people not be scared of sight loss. It's definitely hard and difficult but also has advantages – history shows us this. One of the frightening aspects of blindness is feeling like you are going to be treated differently and be alone. I'd like people to read my book and think that it's all about how we treat each other.

It's important to note that everybody's experience of blindness or of not seeing is unique to them. I don't want to tell people how to feel about blindness per se because it's their experience. I've had bad days and I've been scared, so this book is not all about always being cheerful and positive about blindness. But it is about changing the dial a little bit with regards to how we talk about it. I think that it's important that blind and visually impaired people (blindness is part of a spectrum) own our own history and feel like blind people are not confined to the corridors of history. I'd love in 100 years' time if the word 'blind' would not evoke such emotion and would just be a descriptor.

I want people to see that there's a spectrum of human ability and disability and that it's been around since time began. It's not a separate body of boutique specialist interest. One in five of us will have an eyesight problem, particularly when we are over 60. Still to this day, the notion of blindness is so polarised, and I think it boils down to people being terrified. They are scared that they will not be able to cope. But the point is that you do cope because you have no choice, by functioning in a different way. There are some really good people thinking about this and the development of haptic technology or audio description all come from helping blind people. So why don't we think of it as something that's part of us rather than a niche subject?

TOP A 19th century engraving of blind residents of Stepney Workhouse

ABOVE The Austrian musician and composer Maria Theresia von Paradis was as famous as Mozart



LIFE UNSEEN: A STORY OF BLINDNESS (BLOOMSBURY, 2023) BY SELINA MILLS IS AVAILABLE TO BUY NOW.

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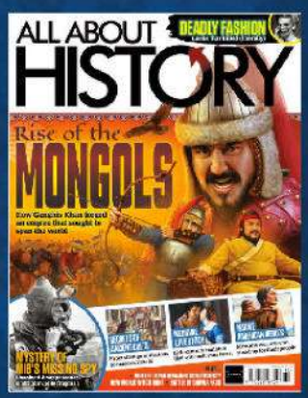

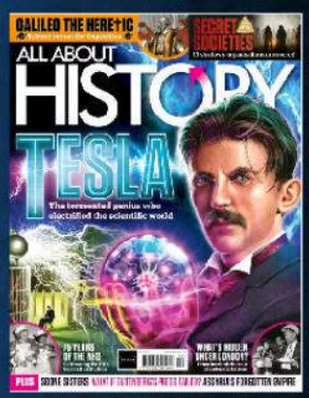

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This illustration shows Saigo's troops blunt the Imperial Army's determined assault on the Shiroyama heights. But the truth was the rebels had been decimated by their enemy's howitzers beforehand

© Getty Images

BATTLE OF SHIROYAMA

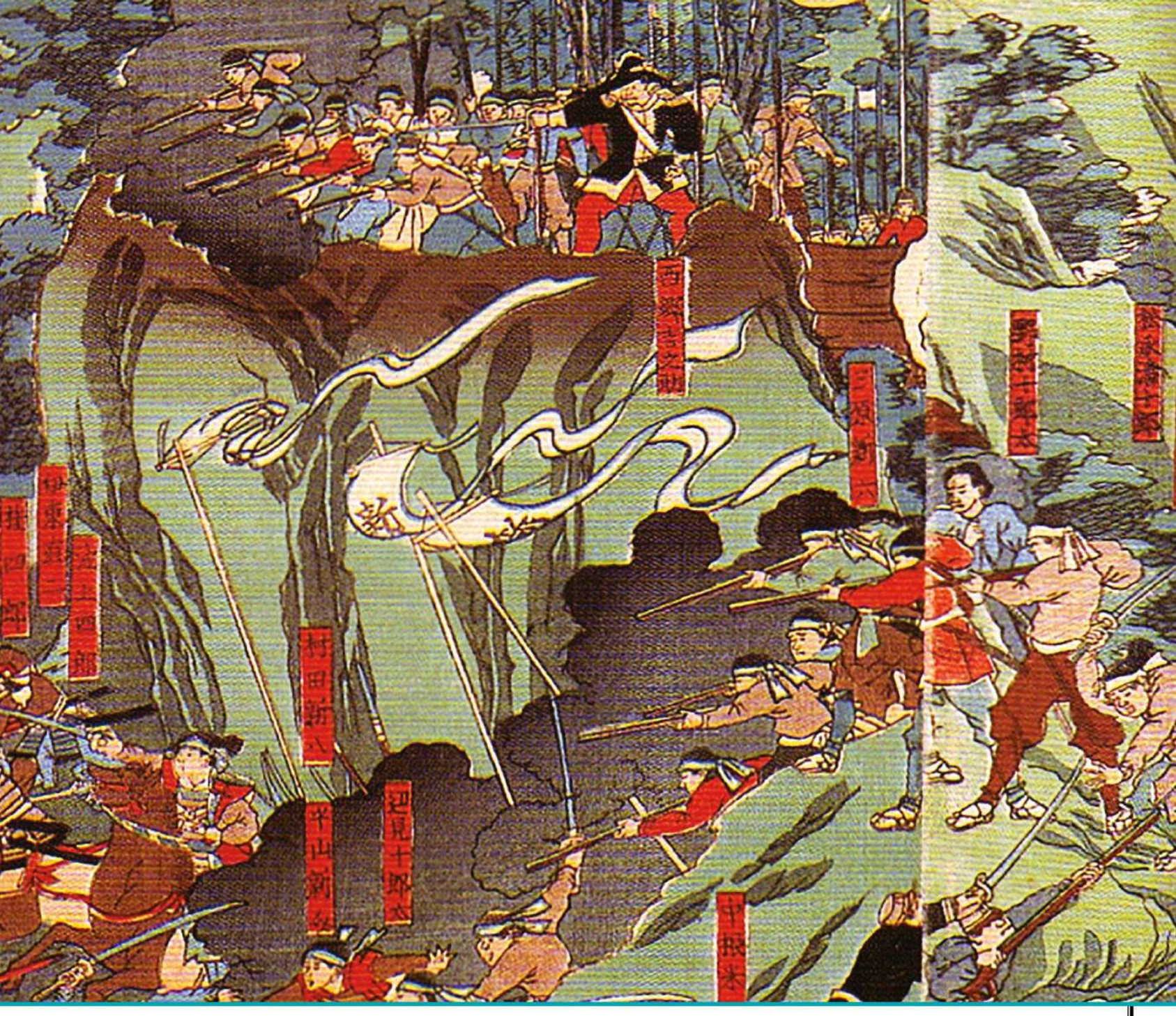
KAGOSHIMA, JAPAN, 1-24 SEPTEMBER 1877

Written by Miguel Miranda

The rising that began on 15 February 1877 had the gravitas and splendour of the Sengoku Jidai (the bygone Warring States period) that roiled Japan from 1467 to 1600. But the circumstances of 1877 were different as samurai in their thousands, armed to the teeth, swept through northeast Kyushu – Japan's prominent southern island.

Outwardly, these fighting men of Satsuma Province announced a long trek to the imperial capital Tokyo as a means for pressing their cause. Within weeks, however, the campaign faltered as a botched siege and a wobbly command structure undermined the rebels.

Adding insult to injury, the response from Tokyo was the arrival of army and police regiments in their drab marine-blue uniforms. Leading the imperial



forces were aristocratic samurai and courtiers who were determined to uphold the new era: the end of the Tokugawa *bakufu* and the permanence of Emperor Meiji.

Leading the rebels was Saigo Takamori, once a champion of restoring the emperor but now fully committed to overthrowing the state.

Opposing him was not just the young Emperor Meiji, formerly known as Prince Mutsuhito, but the imperial court, or *mikado*, that was staffed by the heads of other samurai clans, all firm believers in a modern society that could stand among the world's industrial powers.

The schism between these two factions was not the samurai heritage in particular but the conduct of foreign policy. The rebelling Shimazus under Saigo wanted violent conquests abroad as a means to raise Japan's prestige. The imperial court decided otherwise and set the country on a rapid course toward industrialisation and, for the meantime, Japan would not go to war against any state.

SEEDS OF REBELLION

The limited historiography on the Satsuma Rebellion, often tucked into summaries of the Meiji era, focuses on the discontent that gripped the Shimazu samurai clan when the Tokyo government acted on its policies for overhauling Japan's economic order. With the creation of a financial system patterned after European countries, the feudal organisation of society was dismantled. This meant what had once been clan domains were erased in favour of prefectures, with a governor responsible for the citizens' welfare. The local *daimyo* and their samurai retainers were abolished and, as some compensation, were entitled to receive small pensions. Most importantly, for the Meiji court a modern armed force was to be founded that sidelined the prominence of samurai.

The re-organisation of local government was seen as an onerous burden as samurai families in the Satsuma region lived in marginal poverty. An esteemed adviser and general in the imperial court, the rebel leader Saigo himself was not affected by this reform, but his family were outspoken about Tokyo's foreign policy. In his frustration over the imperial court's reluctance to declare war on Korea and annex Formosa (known today as Taiwan) a contemptuous Saigo quit the government and used his influence to establish paramilitary camps (*shigakkos*) in Satsuma that attracted thousands of

This dramatic depiction of the battle for Shiroyama depicts Saigo, attired like a European officer, directing his samurai against the encroaching Imperial Navy

3x © Getty Images

samurai. There was a dimension of class struggle to this as Saigo's staunchest support did not come from the actual Shimazu family – who enjoyed high-ranking positions in the emperor's court – but the rural samurai of his homeland who feared for their future.

With up to 20,000 samurai mustering under the Shimazu banner a march was set for Kumamoto Castle, a local stronghold and the seat of Meiji authority in Kyushu, but upon arriving at their destination the samurai led by Saigo struggled to overwhelm the garrison. It did not help their cause that the defenders were motivated to hold the fortress and the rebels' ammunition supply was soon dwindling. To add an element of farce, Kumamoto Castle itself was an antiquated structure built in the 17th century and it had never been subjected to any upheaval close to a full-blown siege. The Shimazu were protective of their autonomy in the Tokugawa era so they'd poured labour and money into building small forts around Satsuma. Kumamoto was the largest among them but its elaborate moats, ramparts and wooden towers were far from intimidating. Yet in an indictment of anachronistic samurai warfare, the castle held fast against its former masters.

One major obstacle the samurai rebels faced was a lack of ammunition and gunpowder in Satsuma prefecture. Before the uprising had even begun, the army and national police removed these stores. Nonetheless, the failure to capture even an ageing fortification was certainly damning for the Shimazu clan's reputation.

ROUT AND RUIN

The small garrison who held the castle was led by a loyal and very stubborn officer: Tani Tateki. An unremarkable samurai of unquestionable loyalty, Tateki was astute enough to ignore the rebels' pleas for his surrender. The samurai outside Kumamoto insisted their cause was a just one, but Tateki forbade his troops from leaving and burned all the houses surrounding the castle, giving his riflemen a clear field of fire.

The samurai rebels used some of their cannon against the ramparts and wooden structures of the castle, but the defenders were undeterred. For weeks the garrison withstood hunger and privation but Tateki's gamble paid off. An imperial army that had disembarked at Nagasaki arrived, set the rebels to flight, and relieved Kumamoto Castle by April. The siege of Kumamoto was broken after 55 days and almost depleted the rebel army.

The vanquished samurai rebels made a fighting retreat back to their homeland and marched east toward the coast. Saigo and some 10,000 samurai travelled hundreds of kilometres with ease, avoiding pursuit and detection by much larger imperial forces, and tried to capture the port city of Hyuga. When they met stiff resistance the samurai retreated to the nearby town of Nobeoka to the north and gave battle. When fielded against determined imperial soldiers with sword and rifle the rebels crumbled and were surrounded.

After a consultation with Saigo's commanders on 18 August it was decided to surrender the greater part of the rebel army, some 7,000 exhausted samurai. To save face, Saigo and his staunchest followers such as Kirino Toshiaki were allowed to escape. Having broken through imperial lines in a surprise attack, the ragtag group made haste for Kagoshima and reached it by 1 September.

On 3 September the imperial troops were nearly driven away by the rebels marching from the northeast, but the sudden arrival of the navy ruined Saigo's plans for holding Kagoshima. It did not help that the reinforcements that Tokyo sent to Kagoshima were led by Admiral Kawamura Sumiyoshi, a high-born Satsuma samurai who was once Saigo's comrade-in-arms. Despite this history, Admiral Sumiyoshi would give his opponent no quarter. With just a few hundred of his desperate samurai remaining, Saigo ordered his men to muster whatever supplies they could before they occupied the hilltop of Shiroyama.

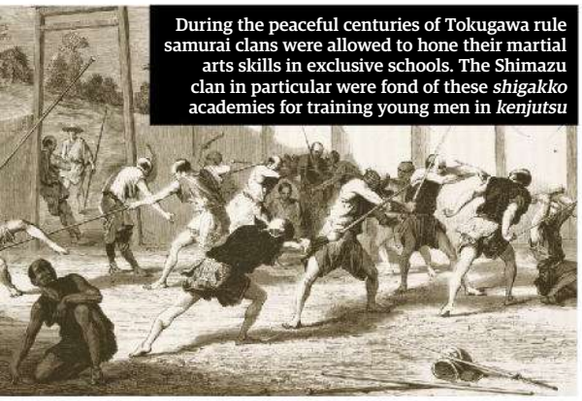
THE LAST STAND

To the dismay of the imperial court and the embarrassment of the army generals in the field, Saigo and at least a battalion's worth of samurai had regrouped and swept into the sleepy coastal town of Kagoshima. Unlike Nagasaki, Kagoshima was closed off from the world and surrounded by forested hills.

The rebels made their camp on the hilltop of Shiroyama, giving them a vista to observe the town below and situational awareness in every direction, but these advantages meant getting cut off from escape and any resupply. The tactical side of things was just as difficult. By the summer Saigo and his followers were little more than fugitives from justice and their families dispossessed of their homes. Elsewhere in the Hyuga domain a guerrilla war unfolded, to the frustration of the imperial troops – northerners with limited knowledge of the region. Those who led the rebellion had nothing to lose, which meant the shortage of ammunition for their Springfield muskets was taken for granted and there was little hope that clemency would be offered by the imperial court. Instead, up to 15,000 imperial soldiers were rushed to Kagoshima in a blatant show of force. These included the Japanese Navy, whose officers were shaped by advisers from Britain's Royal Navy.

The Battle of Shiroyama lasted three weeks and was a brief siege that, as providence would have it, spared the innocent residents of Kagoshima from its worst effects. We must dispel any thought of the ensuing events as a clash between 'traditional' samurai and 'modern' Japanese forces. Both sides

A line of Japanese soldiers practise using their Snider-Enfield rifles with fixed bayonets. During the latter half of the 19th century huge quantities of Western small arms were imported by Japan



During the peaceful centuries of Tokugawa rule samurai clans were allowed to hone their martial arts skills in exclusive schools. The Shimazu clan in particular were fond of these *shigakko* academies for training young men in *kenjutsu*

used rifles as their primary armament and, among the rebels, these small arms were in poor condition after months of combat.

What truly set the imperial forces apart from the rebels was attire; the former adopted the fashion of European armies of the time – button-down jackets and maroon trousers – and their officers sometimes hung sabres on their belts rather than the samurai's katana. By comparison the Shimazu rebels had been reduced to a motley assemblage, half-starved and facing death. None wore any armour, as it had long since become obsolete by the use of guns.

The samurai did carry personal weapons such as swords and spears in case of close-quarters combat, which never did happen during the battle, contrary to sensational newspaper reportage at the time. An advantage for the imperial army below Shiroyama was predictable enough. Aside from sheer numbers, they had howitzers and these medium-calibre artillery pieces, brought ashore from the navy's warships, did their work in reducing the crude fortifications erected by the defiant rebels.

After the first week of the Shiroyama stand-off Kagoshima itself was near-empty; the residents took flight as early as a month prior and some houses were destroyed. By all accounts the officers of the imperial army were far more capable and cautious than their opponents atop Shiroyama. Rather than have their troops assault the rebels, who had the advantages of trenches and dugouts, an assault that could squander lives for little gain, mortars were brought as close as possible without exposing their crews to gunfire – a well-aimed percussion cap musket was still lethal at 200 metres.

The grim reality of the encircled samurai on Shiroyama was, since they established their position with haste, there were insufficient supplies to hold out for any meaningful period of time. Their food supply was almost non-existent, and a few days into their ordeal starvation and weakness set in.

IMPERIAL ARMY & NAVY

EMPEROR MEIJI

When the Tokugawa shogunate was brought to an end in 1867 and the imperial family of Japan was restored to the throne, it was Mutsuhito who became the 122nd emperor of Japan aged just 15. Under his leadership, Japan was set on a path of rapid modernisation that angered some traditionalist samurai.

YAMAGATA ARITOMO

Made chief of staff to the new Imperial Japanese Army, Yamagata was the architect of this new military force's organisation and philosophy. Following his years in the military he served as prime minister on two occasions and as president of the Japanese Privy Council from 1909 until his death in 1922.

KAWAMURA SUMIYOSHI

In command of the Imperial Japanese Navy, Kawamura had a personal family connection to the rebellion's leader as his wife was Saigo's aunt. He was also a native of Satsuma, the region the samurai retreated to. Following the rebellion he was entrusted with the upbringing of future emperor Hirohito and his brother.

SATSUMA REBELS

SAIGO TAKAMORI

One of three nobles who helped to lead the Meiji Restoration, Saigo led forces for the empire in the Boshin War. However, he was persuaded to lead the samurai rebels in the Satsuma Rebellion that followed. Dying at the Battle of Shiroyama on 24 September 1877, he quickly became a folk hero in Japan.

BEPPU SHINSUKE

Another samurai who for a time was an officer in the Imperial Japanese Army, Beppu is believed to have been the man tasked with acting as Saigo's second when he performed *seppuku*. There has been some doubt cast on the gravely injured Saigo's ability to do this, but Beppu was the one to decapitate him.

All images: © Alamy / © Getty Images, wiki/National Diet Library

In addition, the 49-year-old Saigo was in poor shape; exhausted by the flight to Kagoshima, he spent the days in a shallow ditch that barely protected him from the elements. Posthumous illustrations of the rebel leader tend to glamorise him in colourful attire and a distinct white sash tied around his head. This was the romance of Satsuma, but the truth of the matter was Saigo and his holdouts were facing certain death.

SAMURAI DIEHARDS

The doomed samurai atop Shiroyama realised their last remaining hope for survival vanished when a heavy bombardment from the warships anchored outside Kagoshima nearly wiped them out. On the dreadful day of 10 September the rebels suffered at least 200 casualties and their leader Saigo was himself ailing from sickness. But Admiral Kawamura was steadfast in his mission to annihilate the rebels and he went as far as rebuffing an attempt by Shimazu clan emissaries who inquired about a possible ceasefire.

The last phase of the battle was a gruesome mop up. The imperial forces readied an intense bombardment and, on the morning of 24 September, launched an all-out assault with infantry. On they came in unbroken lines through the fog and smoke with rifles brandished, lethal and unstoppable. The samurai behind the palisades managed a feeble resistance; they were low on ammunition and morale but custom dictated they couldn't abandon their leader and face the ultimate shame – to be held captive by peasant conscripts and rival samurai from the Satsuma region.

There was no drama or poignancy in this final spurt of violence, only a miserable end for the rebels. When Saigo was shot near his groin the exhausted leader performed a form of ritual suicide known as *seppuku* to spare himself the humiliation of surrender. There was a hurried effort to conceal the severed head of the rebel leader but this too was collected among the corpses in the overrun encampment. With little fanfare or celebration the victorious imperial troops retrieved the bodies of the fallen – casualties were light on their side – and buried them in a mass grave.

No other civil disturbance followed the Satsuma Rebellion and the influence of the Shimazus and other samurai clans was never restored, although a local legend soon emerged from the episode. The events were dramatised in pictorial form through *ukiyo-e* – woodblock prints – and these circulated in newspapers and magazines at the time. It was through *ukiyo-e* prints that the Shimazu rebels attained a place in history they never deserved: as the vengeful samurai pitted against the Westernising state being ushered in by the Meiji court. The irony is the rebellion validated the government as it showed the rest of Japan how it managed a national crisis.

01 Kagoshima overrun
On 1 September approximately 400 samurai led by Saigo Takamori rush into Kagoshima from the northeast. They overrun the town but are outnumbered.
02 Reinforcements
With fresh imperial troops arriving by sea the rebels evacuate the town and take over the Shiroyama heights on 3 September.
03 Standing firm
The rebel stronghold is inaccessible from almost all directions, which protects them from a determined assault by imperial troops.
04 Under fire
By 10 September mortars are now in position just yards away from the rebel perimeter. Other 50-pounder cannons farther away maintain a steady bombardment.
01
04
- SAMURAI
- IMPERIAL

05 Heavy casualties

The Japanese Navy's offshore ironclads open fire on Shiroyama and inflict heavy casualties from 10 September until 22 September. Up to half of Saigo's men are killed or wounded.

06 Bloody endgame

As many as 15,000 Japanese army conscripts and sailors are sent to Kagoshima from different parts of Japan. The final assault takes place on 24 September and most of the rebels are killed.

"THE JAPANESE NAVY'S OFFSHORE IRONCLADS OPEN FIRE ON SHIROYAMA AND INFLICT HEAVY CASUALTIES FROM 10 SEPTEMBER UNTIL 22 SEPTEMBER. UP TO HALF OF SAIGO'S MEN ARE KILLED OR WOUNDED"

Map by Nicholas Forder

What If...

ENGLAND HAD REMAINED A REPUBLIC?

With no ruling monarchy and no Christmas, what would a continuing republic have looked like?

Interview by Callum McKelvie

INTERVIEW WITH JOHN MORRILL

Professor John Morrill is an expert on the English Civil War and the Interregnum. He taught at Trinity College, Oxford and is the author of *Oliver Cromwell: The Brave, Bad Man Of British History* due for publication in October.

Following the Roundhead victory at the end of the English Civil War, King Charles I of England was executed. Oliver Cromwell, the leader of the new republic, took charge but refused the crown himself. For the next 11 years, in a period known as the Interregnum, Cromwell and Parliament ruled over a now strictly puritan nation. Festivals such as Christmas and Easter were banned and theatres were closed. But following Cromwell's death and the lacklustre reception of his successor, Charles II returned to England and the monarchy was restored. However, is it possible that if a different successor was chosen, the English republic could have continued?

What was the situation in England upon the death of Oliver Cromwell in 1658?

Complicated. On the one hand the nation was secure and there was no realistic prospect of any uprisings attempting to overthrow the regime. Over the previous years all Royalist opposition had been disarmed and dispirited. There's a Presbyterian who says of Cromwell that "I Will not oppose him, but he deserves to be hanged for a fool If he thinks that I will help him if once he stumbles". In other words, he's achieved acquiescence but he lacks popular support. I think it's important to remember that we are not only talking about England but Scotland, Wales and Ireland too. The regime is secure, but only because it's got a very large military establishment and very tight military control. For example, there is a significant series of garrisons in Scotland, and they're important not only for intimidating the population and reminding them that there's no point in rebelling, but also because the military officers stationed there act as magistrates and local governors. So it's a highly militarised regime. In Ireland 40 per cent of all land was transferred from Irish Catholics to English Protestants and 40,000 Catholic soldiers deported, but the problem is that he's running out of money. The large funds needed to support the military establishment always outstripped even the very high levels of taxation that were in place.

Initially, that problem was resolved by selling the land of cathedrals, the bishops, the crown and 800 'malignant' royalists. Eventually, they ran out of land to sell and were forced to use credit. Interest rates went up and Cromwell had already alienated the main money men in London – he'd not honoured his promises to prioritise them in the redistribution of land in Ireland. However, Cromwell was aware that if he cuts back on the army and significantly reduces the military presence then it's possible there might be unrest, particularly in Scotland and Ireland. So things are not entirely secure.

So how much of the eventual collapse of the republic is due to Richard Cromwell's effectiveness as a leader?

A number of historians have made attempts to rehabilitate Richard Cromwell.

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RIGHT
The brutal English civil wars saw King Charles I executed and Britain plunged into a Puritan Republic

Deal
with it

THE PAST

1660

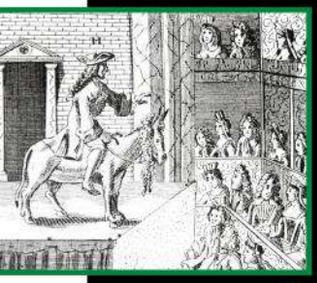
THE RESTORATION

Following Richard's disastrous rule he was forced to flee. Parliament would eventually choose to restore the monarchy and Charles II was invited back to once again rule over his former kingdoms. In a ceremony on 23 April 1661 he was crowned, the delay partly being due to the fact that a new crown had to be made as the previous one had been melted during the years of the republic. His reign was a troubled one, thanks to outbreaks of plague, the disaster of the Great Fire of London and defeat in the Second Anglo-Dutch War.

1660 – 1710

RESTORATION COMEDY

By order of Parliament, on 6 September 1642, London's theatres were closed and would remain so for the next 18 years. Under Cromwell, this form of entertainment was seen as 'ungodly' and so was banned. However, upon Charles II's return theatre once again flourished. In particular, comedy proved extremely popular. 'Comedy of Manners', as the style of this period became known, was a form that poked fun at the behaviours and societal norms of the day. Many restoration comedies are still performed to this day.



1688 – 1689

GLORIOUS REVOLUTION

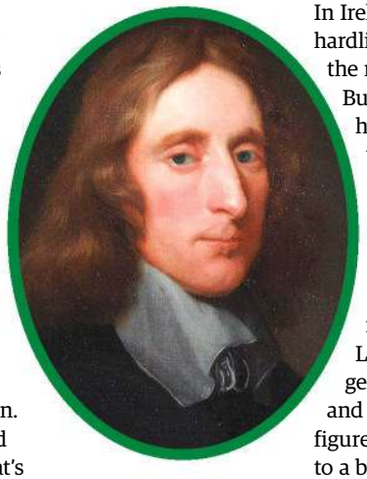
Following the death of Charles II, his brother, James II, became king. James quickly proved himself to be an unpopular ruler and pushed England to the brink of another civil war. William of Orange and his wife Mary arrived in England with an army and James was removed from the throne. Their reign saw more limits placed on the power of the monarchy and greater rights given to parliament.

For example Jason Peacey, a very good historian, believes that he was really nowhere near as bad a leader as he was made out to be. Personally, I'm not so sure. One problem regarding Richard's succession is that Oliver Cromwell, under the constitution of 1657, was required to nominate his own successor. There wasn't any other mechanism through which someone could legitimately take charge. On the day before his death, Cromwell is said to have been delirious and murmured Richard's name to an appreciative audience – but of course if he hadn't they'd be in a real pickle! But there's also quite a strong possibility that Cromwell had written a nomination and given it to his secretary of state John Thurloe, who was a master of steaming out sealed documents. WH Dawson in the 1930s argued that Cromwell had actually nominated John Lambert but the council suppressed this and claimed he nominated Richard instead. So there's added complications to Richard's succession.

How was he as a leader? He lacked charisma but also a clear vision. That's pretty fatal when he's surrounded by powerful people who do have visions but they clash with one another. It's possible he was put in because everyone thought that he was weak and that they could control him. He seems to have been paralysed into inactivity, all the while the financial situation continues to deteriorate and army unrest continues to grow.

ABOVE-LEFT
The death mask of Oliver Cromwell. At the end of his rule the republic was in financial difficulties

ABOVE-RIGHT
During his return to England, Charles II stopped in Rotterdam. If the republic had not fallen, would the monarchy have remained in exile?



ABOVE
Oliver Cromwell's son, Richard, who lacked the vision and charisma to be a successful ruler

Could Cromwell's son in law, Henry Ireton, or John Lambert have made effective leaders?

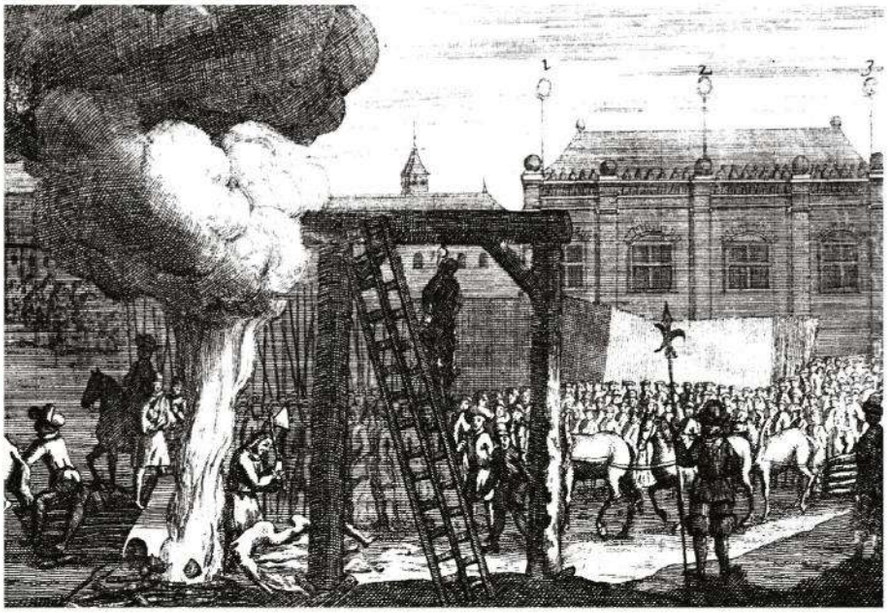
Years earlier Henry Ireton might have seemed the obvious successor but I've often thought that, prior to his death, there had been a pretty catastrophic falling out between him and Cromwell. Although there had been a close bond between them, towards the end of Cromwell's time in Ireland he seems to be really demoting Ireton. What the latter could have brought is a very clear legal mind. He was less fiercely puritan than Cromwell and most likely would have been very concerned with getting a written constitution that really worked. In Ireland he likely would have been very hardline and interested in dispossessing the remaining Catholic population.

But I'm not entirely sure that if he had survived he would have been a tremendously attractive alternative.

On the other hand, if there was an envelope containing John Lambert's name, then that's a more intriguing possibility. Let's assume that Lambert was in fact Cromwell's nominee. What would that mean? Lambert came from solid Yorkshire gentry stock, more solid than Cromwell and so he would have been an attractive figure for the gentry. He's committed to a broad religious settlement, but he doesn't have Cromwell's zeal and doesn't have Cromwell's desire to build a new Jerusalem. He also has an unblemished military record and had been a highly successful general in the north and then in Scotland. He is much more considered and moderate than anyone else and there is a possibility that he could have been successful. But how he would have solved the financial difficulties, I don't know.

So if the republic had continued, what could it have looked like?

The most obvious thing is it wouldn't have been Anglican, there would still have



been a broad national church based on puritan principles together with a very broad toleration for others. The second thing is that I think the configuration of England, Ireland, Scotland, Wales would have remained very different. Under the protectorate, there was a single parliament for the whole of these islands for the only time before 1801. There would not have been the restoration of Irish and Scottish Parliaments as there was in 1660 and there would not have been a large degree of devolution with executive functions and judicial functions. Most likely, it would have been a very colonial system. With Englishmen, acting as chief executives and boards in Scotland. I think the process of colonisation and acculturation in Scotland and Ireland would have been a major, long-term difference.

ABOVE
Following the collapse of the republic, the bodies of Oliver Cromwell, Henry Ireton and John Bradshaw were posthumously executed

Would it have remained strictly Puritan? In particular, could you see festivals such as Christmas returning?

To an extent they already were. Despite Puritan attempts, aspects of traditional Anglican religious culture were creeping back, particularly around festivals like Christmas. In fact, there were still Christmas festivities in a large number of churches. For example, the Puritans had tried to replace the old Anglican system, in which people took communion only at Christmas, Easter and Pentecost, with monthly communion services. But in most parish churches it's quite clear they are still celebrating communion at Christmas and Easter. They may be using some more puritanical forms, but they are remembering these are the great festivals. So there are lots of people who are using the Book of Common Prayer for baptisms, weddings, funerals, and accommodating semi-Puritan forms of festivals such as Christmas. So it is possible we would have seen a new form of the Sacraments, still not fundamentally Anglican, but with these ideas creeping back.

ABOVE
Was General John Lambert chosen as Cromwell's actual successor?

What do you think could be some implications for today?

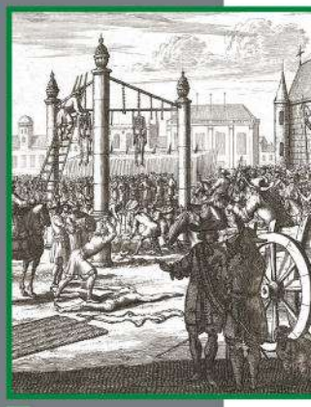
It's almost impossible to say. However, I do think there are two societal impacts that we can trace back to the Interregnum. The first is that in England, since the 17th century, there has been a deep suspicion of religious fanaticism. There hasn't ever been the kind of religious extremism that you find in the history of most European countries. Indeed, I think there's a fear of fanaticism in general. You can even take this further as Britain was probably the least affected by the totalitarian movements of the 1930s and 1940s. There is a kind of societal fear of a return to a rather false memory of what the mid 17th century was all about. You see this in the lack of revolutionary fervour in Britain during the French Revolution and the decades afterwards. The second is that there has never been any move in Britain back to having military heroes as political leaders. Wellington is a partial exception, but he becomes prime minister 15 years after Waterloo and he's more of a figurehead. There's a suspicion that you don't want military leaders with strong support in the armed forces, as political leaders. However, if you look around the world, you'll find that pretty unusual. If England had remained a republic, it's impossible to say whether this suspicion of religious fanaticism or the lack of military heroes as political leaders would have occurred.

THE POSSIBILITY

1660

OLIVER CROMWELL – HERO?

In the autumn of 1660, the bodies of Oliver Cromwell, Henry Ireton and John Bradshaw were removed from their graves at the orders of Charles II. The bodies were taken to the gallows at Tyburn where they hung from chains before being beheaded. For the next 25 years, the heads were placed on a large spike outside Westminster Hall. However, one night a storm dislodged Cromwell's head. For centuries the head passed through various hands, even appearing in a touring 'freak show' before being buried at Sidney Sussex College in the 20th century. Had the republic continued it's highly doubtful he would have received such treatment and may have been treated as a national hero.



1706 – 1707

A SCOTTISH COLONY?

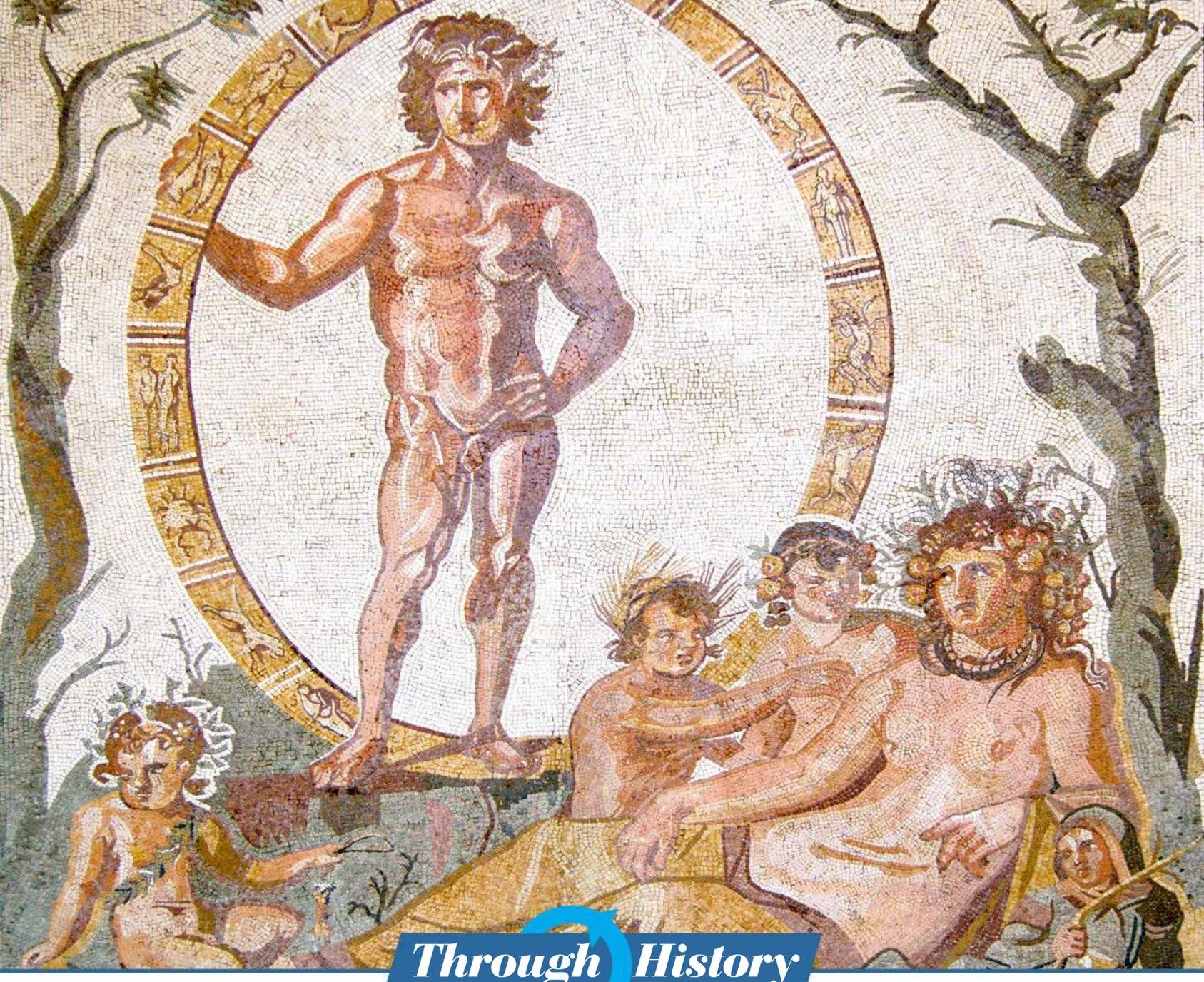
The Treaty of Union and the Acts of Union, passed in 1706 and 1707 overseen by Queen Anne, resulted in the creation of Great Britain and united England and Scotland. However, as John Morrill suggests, had a republic continued it is likely that these acts would never have occurred. Instead, England may have taken a more colonial approach to rule in Scotland.

2023

NO MORE MONARCHY?

Since Charles II was restored to the throne, there have been 16 subsequent monarchs. The current king, Charles III was crowned on 6 May 2023. However, if the republic had continued, what position would the monarchy be in? Would they have died out in exile? Or would there have been further civil wars as they sought to regain the throne?

All images: © Alamy. © Getty Images



Main image: © Public Domain, Bibi Saint-Pol

Through History

WHO ARE THE PAGANS?

A new book explores the rituals and beliefs of 'pagan' communities through their material culture

The label of 'pagan' has been used for over a thousand years by Christians to describe those who did not conform or subscribe to Christianity, and instead worshipped their own gods and goddesses. Then, in the 20th century, groups such as Wiccans and Druids began to refer to themselves as pagans. As a result, the term 'pagan' has come to encompass a large and diverse population, with each historical and modern community within this definition having their own beliefs and practices. So can paganism be defined and what did pagans believe?

In *Pagans: The Visual Culture Of Pagan Myths, Legends And Rituals* (Thames & Hudson, 2023), writer Ethan Doyle White has collated information on 'pagan' communities throughout the centuries and presented facets of their cultural identities through various images and artefacts. Each stunning page of images, accompanied by Doyle White's concise and informative research, helps readers to understand more about what and how different 'pagan' communities have worshipped throughout history and navigates the eclectic material culture of different religious groups. Doyle White's book analyses and explains, in a visually beautiful way, the array of rituals and symbols that have come from 'pagans' who have found divinity in the natural and material world.

SACRIFICE

Human sacrifice has been a practice of many cultures through the ages. This blade, which dates from the 11th to the 15th century, was probably used in sacrificial rituals by the Chimú people of Peru.

© The Metropolitan Museum of Art, New York, gift and bequest of Alice K. Bache, 1974, 1977

MJÖLNIR

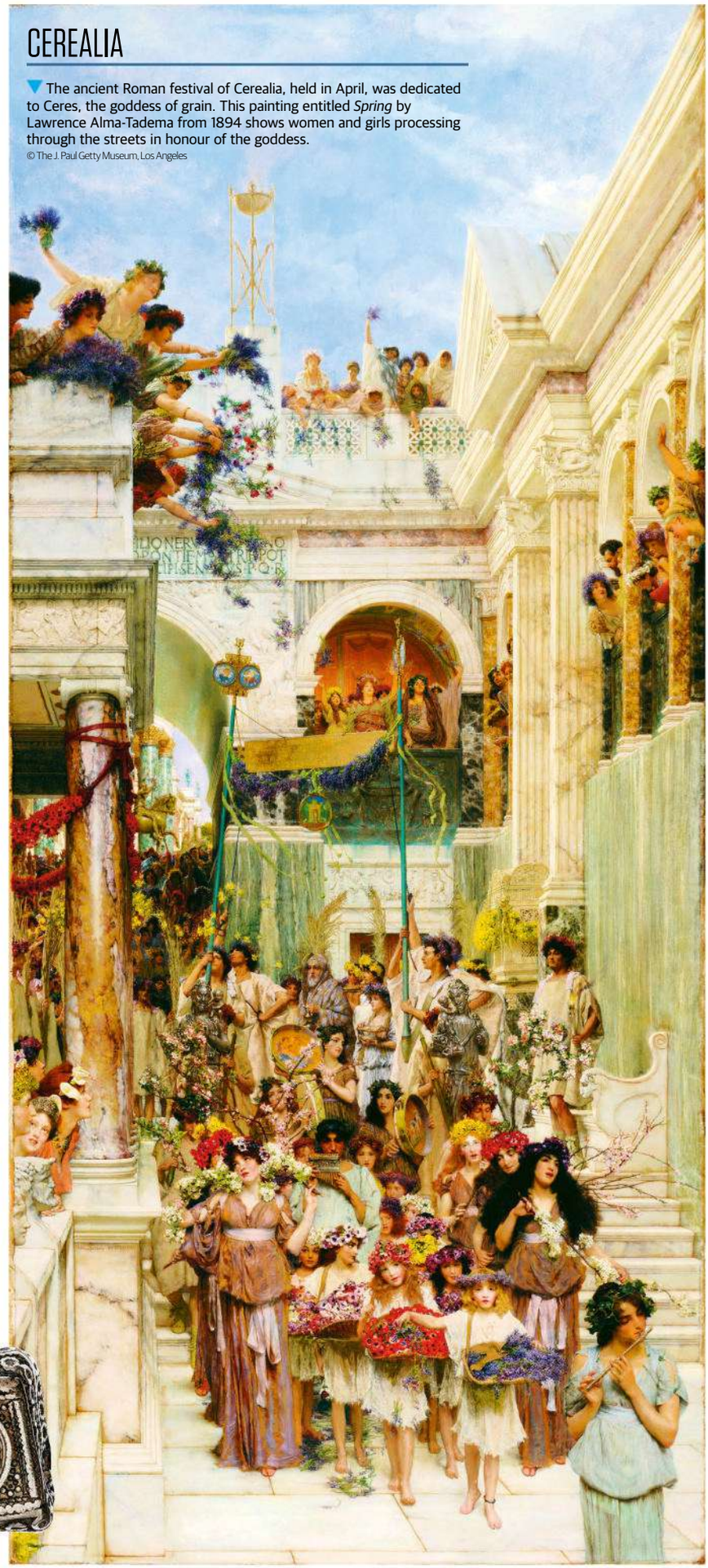
In old Norse mythology, the god of thunder and lightning, Thor, wielded his hammer known as Mjölnir. Pendants of the hammer, like this silver one from Skåne, Sweden were worn by religionists between the 9th and 11th centuries.

© Ola Myrin, Statens historiska museum/ Swedish History Museum, Stockholm

CEREALIA

The ancient Roman festival of Cerealia, held in April, was dedicated to Ceres, the goddess of grain. This painting entitled *Spring* by Lawrence Alma-Tadema from 1894 shows women and girls processing through the streets in honour of the goddess.

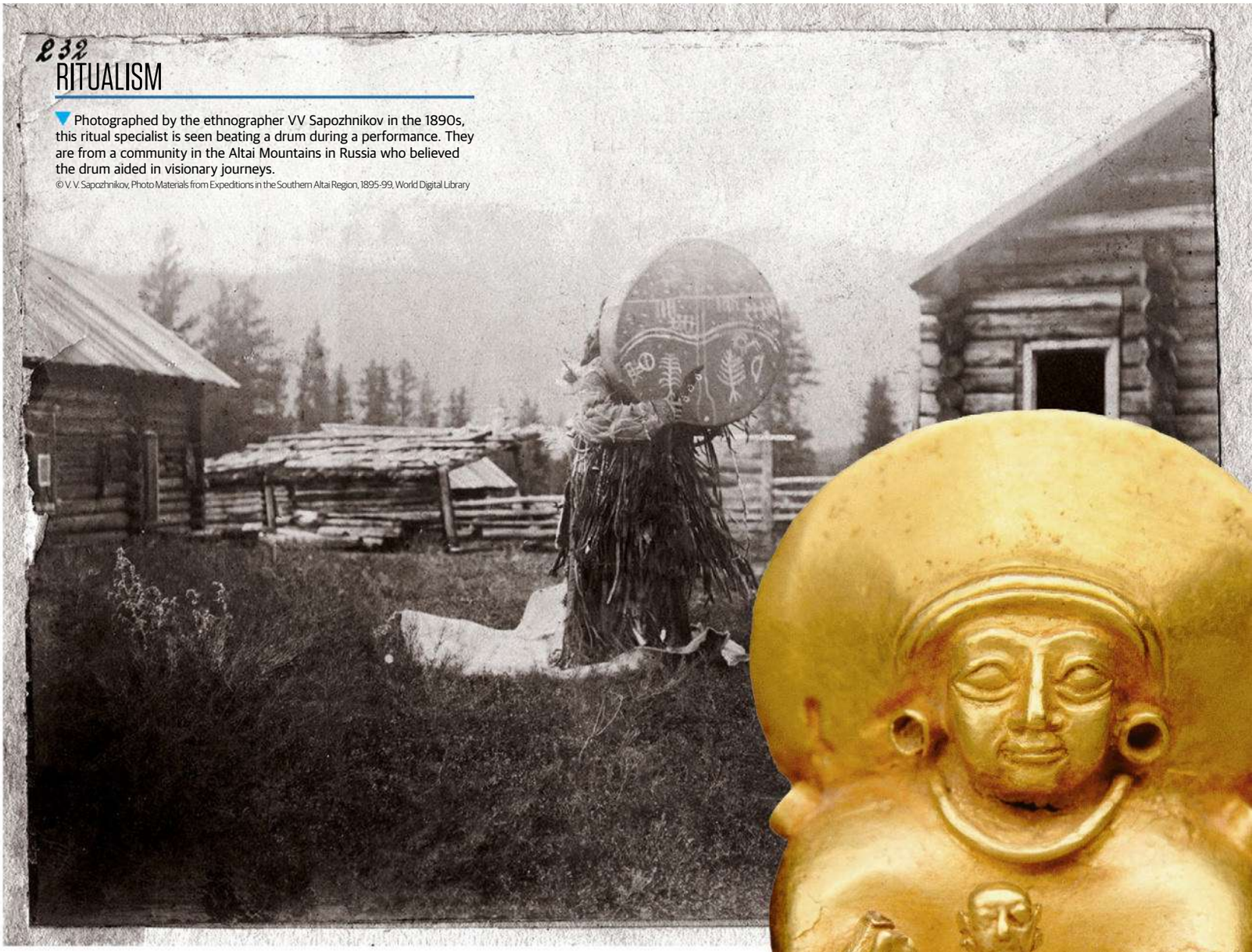
© The J. Paul Getty Museum, Los Angeles



RITUALISM

Photographed by the ethnographer VV Sapozhnikov in the 1890s, this ritual specialist is seen beating a drum during a performance. They are from a community in the Altai Mountains in Russia who believed the drum aided in visionary journeys.

© V. V. Sapozhnikov, Photo Materials from Expeditions in the Southern Altai Region, 1895-99, World Digital Library



MYTHICAL BEINGS

Various communities throughout history have believed humans share the natural world with mythical beings. This painting by John Bauer from 1915 shows a family of trolls from Scandinavian folklore. Trolls were believed to turn to stone during the day.

© John Bauer, 'The Boy and the Troll or The Adventure', Among Gnomes and Trolls, volume 9, 1915

GOLD AMULET

Possibly depicting a sun goddess, this gold sculpture may have been worn as an amulet. It has been attributed to the Hittite people of Anatolia and dates from the 14th or 13th century BCE. It was cast using the lost-wax technique.

© The Metropolitan Museum of Art, New York, gift of Norbert Schimmel Trust, 1989

IZANAGI AND IZANAMI

▲ This 18th century painting by Nishikawa Sukenobu shows the god Izanagi and goddess Izanami observing the creation of an island. The scene comes from the creation story of the Japanese Shinto religion in which the deities stir the seas to form land.

© The Metropolitan Museum of Art, New York, Mary Griggs Burke Collection, gift of the Mary and Jackson Burke Foundation, 2015

THE ORACLE AT DELPHI

▶ This painting from 1880 by Camillo Miola shows the Pythia, a priestess of Apollo, who served as an oracle. The Pythia was based at Delphi in Ancient Greece where she would see visions after imbibing vapours that rose from the floor of the temple.

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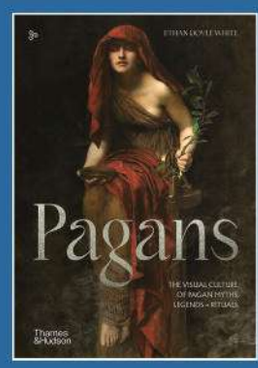


Pagans: The Visual Culture of Pagan Myths, Legends and Rituals (Thames & Hudson, 2023) by Ethan Doyle White is available to buy now.

REVIEWS

The books, TV shows and films causing a stir in the history world this month

©StudioCanal

CROSS OF IRON

A grimy Eastern Front drama about the madness of war

Certificate: 18 **Director:** Sam Peckinpah **Cast:** James Coburn, Maximilian Schell, James Mason **Released:** Out now

Mankind's propensity to violence as a first resort is the quintessential theme in the work of Sam Peckinpah. His most famous and celebrated film is *The Wild Bunch* (1969), whose slow-motion bloodletting announced a new era in what could be shown on screen. *The Wild Bunch* is a western set in the early 20th century when outlaws were fast running out of places to hide, but his 1977 picture, *Cross Of Iron*, offered Peckinpah the chance to explore man's savagery to man in its optimum setting: the war movie.

This new Blu-ray release by StudioCanal's Vintage Classics label benefits from a frankly stunning 4K restoration sourced from the original 35mm negative. Over 240 hours went into cleaning and removing flaws, including scratches, dirt, wobbly frames, and other imperfections which occur when celluloid ages in the can. *Cross Of Iron* has never looked better; the restoration team having done the Lord's work in preserving this under-appreciated but masterfully staged war-is-hell yarn.

As the honorific title suggests, *Cross Of Iron* is a depiction of World War II told from the German perspective, the Iron Cross medal given out to soldiers who demonstrated the utmost bravery in the field of combat. Beginning with an eerie montage of newsreel footage capturing Hitler's political and psychological grip over a nation, real-life scenes that recall Leni Riefenstahl's propaganda documentary *Triumph Of The Will* (1935), hauntingly soundtracked by the folk song *Hänschen Klein* (Little Hans), Peckinpah atmospherically sets the stage for an extraordinarily brutal anti-war saga, also complete with painstakingly accurate use of uniforms and weaponry.

A mainstream English-language production, made by a big-name director, with screen legends such as James Coburn and James Mason appearing in key roles, typically WWII movies took the POV of the Allied nations fighting the Nazis on the beaches, in the forests and villages of France, Italy and Germany. Here instead, Peckinpah explored the fraught and dangerous plight of the ordinary duty-bound Wehrmacht soldier busy fighting a losing campaign. It equally afforded the opportunity to explore class conflict via festering antagonisms between the imperious and aristocratic Captain Stransky (Maximilian Schell) and brave non-commissioned officer Steiner (James Coburn), which brilliantly adds further fuel to the blazing conflagration of battle.

Unfolding on the Taman Peninsula in the Soviet Union, as the 17th army falls back and increasingly and obviously stares bitter defeat in the face, the soldiers and their commanders, in between skirmishes, sit around drinking themselves into oblivion, the film's gangrenous hues and muddy landscapes adding to the sense of slow decay and the ever-present nightmare of inglorious death.

Showing the men as cannon fodder for the Iron Cross-obsessed Stransky, as well as the disarray stemming from a broken command chain, this sympathy with the average conscript, – for usually Germans are depicted as zombie-eyed Nazis – helped mark the film out from the crowd; especially in a genre stuffed to the gills with American GIs blasting away faceless hordes of the Wehrmacht. ***MC***

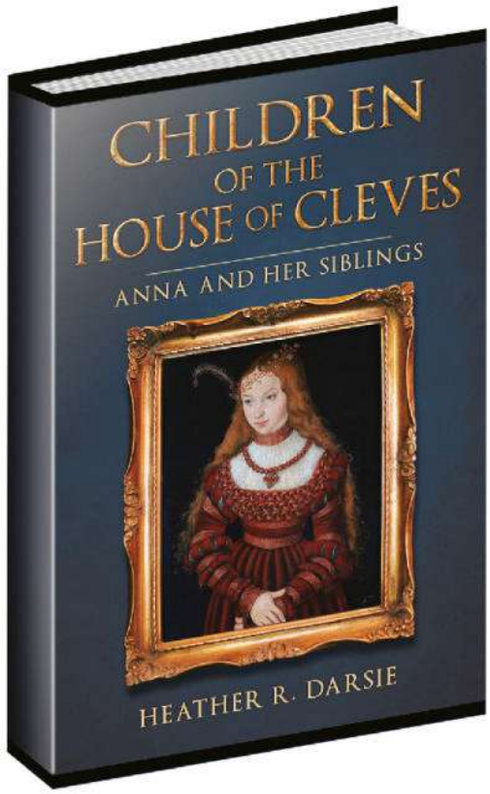
★★★★★

Reviews by
Martyn Conterio, Catherine Curzon, Mallory James, Jonathan Gordon

CHILDREN OF THE HOUSE OF CLEVES: ANNA AND HER SIBLINGS

An in-depth dive into the family of Anne of Cleves

Author: Heather R Darsie **Publisher:** Amberley Publishing
Price: £22.99 **Released:** Out now

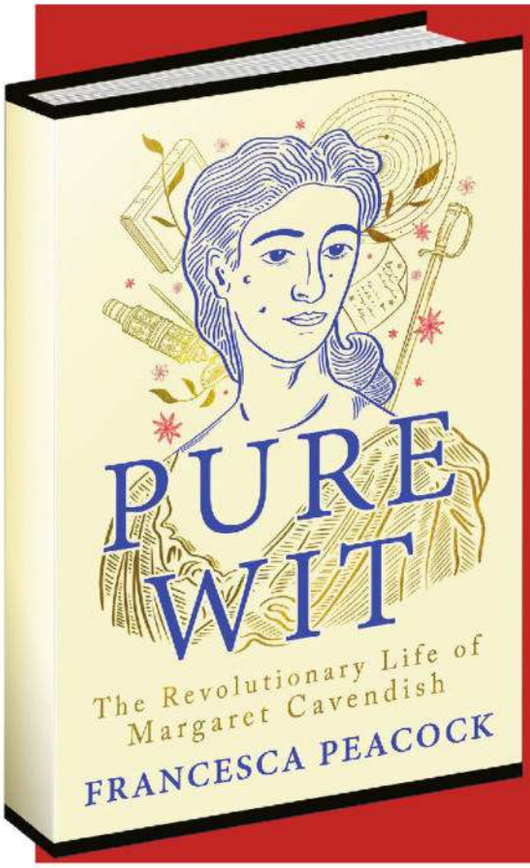


Children Of The House Of Cleves delves into the life of Anna - better known to most as Anne of Cleves - and her siblings, parents, and wider family. While much has been written about Anne thanks to her ill-fated marriage to Henry VIII, this is much more than a retelling of that familiar story. Instead, it is a comprehensive and well-researched account of some of the most turbulent times 16th century Europe ever witnessed, seen through the eyes of the House of Cleves.

Author Heather R Darsie tells the story of the era through the children of the dynasty of Cleves. Their lives were rife with incident and between them Sybylla, Anna, Wilhelm and Amalia played a part in some of the most infamous events in history, as well as some that will doubtless be less familiar. From their personal troubles to the occasionally hair-trigger political climate through war, marriage and madness, *Children Of The House Of Cleves* tells the story of this once powerful dynasty.

The book is clearly structured and bolstered by appendices and additional information including quick reference tables of the important players across Europe and within Anna's family as well as an essential timeline. There is also a comprehensive bibliography for those who wish to read further and even a fascinating endnote on the matter of witches and demons. This is a book that should appeal to a broad range of audiences; it is authoritative, readable and fascinating. ***CC***

★★★★☆



PURE WIT: THE REVOLUTIONARY LIFE OF MARGARET CAVENDISH

Following a unique woman through war, exile and return

Author: Francesca Peacock **Publisher:** Head of Zeus
Price: £27.99 **Released:** 14 September

In 1643, Margaret Cavendish (then Lucas) made a dangerous and almost unthinkable journey. Accompanied by her brother, she made her way from London to Oxford - crossing a country ravaged by the Civil War - to join the court of Queen Henrietta Maria.

Shy and anxious, Margaret struggled in her new surroundings. But she was committed to the Royalist cause, and would later follow the queen into exile in Europe. Over the course of war and exile, Margaret suffered multiple bereavements. Her home was also ransacked by Parliamentarian forces, and the graves of her mother and sister desecrated. They made wigs of their hair.

In this new biography of Margaret, *Pure Wit* details the Civil War alongside her personal story. However, it also provides a wider and extensive exploration of the 17th century, encompassing philosophy, science and literature. It particularly considers women's writing - and publication - during this era.

Margaret was a Royalist aristocrat - in exile she would marry the then Marquess, and future Duke, of Newcastle upon Tyne - but as well as this, she would become a published author in an era when few women did so. Margaret's works included poetry and philosophy, questioned marriage for women, and offer one of the earliest examples of what can be described as science fiction.

Pure Wit presents a rich portrait and detailed examination of Margaret's compelling, complex and controversial life, and analyses how she has been forgotten and remembered in the centuries that have followed. ***MJ***

★★★★½

What If Book of Alternative American History

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HISTORY OF WAR **RECOMMENDS...**

Luck of the Draw

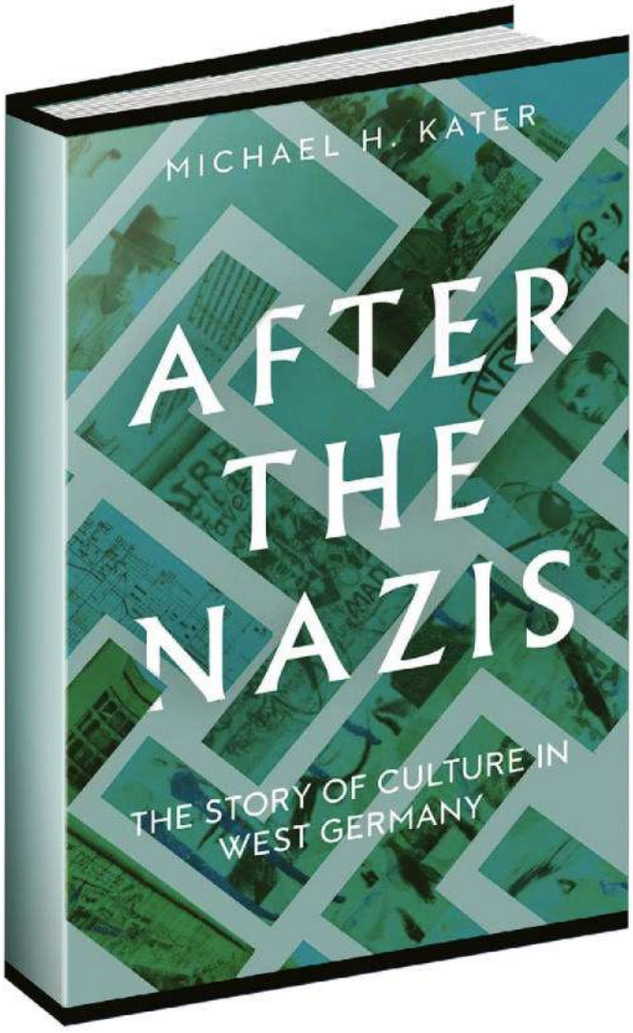
Author Frank Murphy **Price** £25 **Publisher** Elliott & Thompson

Including a vivid description of the costly raid against manufacturing infrastructure in the city of Regensburg, Germany, on 17 August 1943, this book reveals the harrowing nature of combat in the clouds. Frank Murphy and his B-17 Flying Fortress bomber, and fellow crewmen, survived that pulse-pounding experience, but Murphy's bomber was later shot down during a raid on the city of Münster, and he endured the privations of captivity as a German prisoner of war. A compelling chronicle.

AFTER THE NAZIS

How West Germany rebuilt itself culturally following WWII

Author: Michael H Kater **Publisher:** Yale University Press **Price:** £25 **Released:** Out now



"With so much lost under the Third Reich... a cultural chasm was waiting to be filled"

This is the concluding book in a series from Michael H Kater on German culture following *Weimar: From Enlightenment To The Present* (2014) and *Culture In Nazi Germany* (2019). Having tracked cultural movements and influences from one of Germany's most influential cities to the upheaval of Nazism, he now looks at the tumultuous post-war era, and it's possibly the most fascinating of them all.

Kater paints a picture of a nation stripped of cultural touchstones it could rely on. The Nazis had destroyed and sidelined art that it considered unworthy (at best) and degenerate (at worst). Now, in the post-war era, anything connected to the Nazis was also taboo. With so much lost under the Third Reich and now a whole generation of art considered tainted by Hitler's regime, a cultural chasm was waiting to be filled. It's a dark and daunting image in many respects, but also one full of possibilities, which you can feel in Kater's own descriptions of it.

The new creative voices of West Germany, as the democratic half of the nation was now known, were embracing rebellion, internationalism and anti-establishment thinking. There was experimentation and the expression of individualistic voices, not the grand social hegemony that had been expected of the 1930s and 40s.

However, these new creative endeavours were not without some shadow of Nazism still hanging over them and, again, Kater takes us down this thread. How did the spectre of totalitarian rule, the war and the horrors of concentration camps weigh on the national consciousness, if at all? How deep had the tendrils of National Socialism dug into people's skin? What place would German Jews have in this new nation? *After The Nazis* opens with a chapter about exactly those issues as well as life under Allied occupation and the efforts to rebuild West Germany into a democratic state.

There's also an important connection drawn between cultural freedom and democratic ideals. The Third Reich controlled culture and the arts as a means of social control. People were not free to think or act as they wished and artistic restrictions both reflected and enforced this view. In West Germany, a new spirit of democracy needed to be engendered and freedom of expression was integral to this. And all in a nation that was essentially bankrupt and rebuilding its economy piece by piece. Kater lays out the gradual process very well, not least because he grew up living it.

From the outset, Kater reflects on his own personal connections and experiences to draw readers into these stories, remembering episodes from his own time growing up in Germany or the distant relations of the past who had their roles to play in daily German life. This humanisation is a welcome respite given that much of the book can feel very academic and heavy in its language and references, but it is also a means to ground the history and information being shared, making it all that little bit easier to engage with and digest. ***JG***

★★★★☆

HISTORY VS HOLLYWOOD

Fact versus fiction on the silver screen

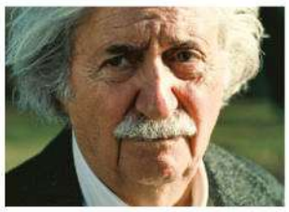
OPPENHEIMER

Director: Christopher Nolan **Starring:** Cillian Murphy, Emily Blunt, Matt Damon **Country:** USA **Year:** 2023

The story of the man who ushered in the atomic age, but does it drop a bomb when it comes to the facts?

VERDICT: An incredibly accurate portrayal of J Robert Oppenheimer's life, only *slightly* let down by some stars on a flag.

01 In Christopher Nolan's biopic, theoretical physicist J Robert Oppenheimer fears nuclear detonation could result in a chain reaction that would destroy the world, and consults Albert Einstein (Tom Conti). However, in reality he spoke to Arthur Compton.



02 Oppenheimer's affair with Jean Tatlock (Florence Pugh) continues despite his marriage and during his work at the Manhattan Project. Authors Kai Bird and Martin J Sherwin (*American Prometheus*) assert this, though it is debated by other historians.

03 General Groves (Matt Damon) is the military director of the Manhattan Project. Despite their differing temperaments, the film shows them as developing a friendship. In reality, while it might be hard to describe them as friends, they worked well together.

04 Oppenheimer meets President Truman, tries to warn him of an arms race and informs him "I have blood on my hands". Truman takes offence and refers to him as a "crybaby" scientist. This interaction really occurred and is replicated almost word for word.

05 Recently, the internet has seen a wave of fans point out an error during a key sequence following the bombings of Hiroshima and Nagasaki. Americans are shown waving flags with 50 stars, representing 50 states. However, in 1945 there were only 48 states.

AllImages: © Alamy

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Did you know?

Allegedly the Copts ate ta'amia during Lent when they were not allowed to eat meat.

Main image: © Abeny
Inset image: © Getty Images

Ingredients

- 400g dried fava beans
- 4 cloves of garlic
- 2 onions
- 1 tsp ground cumin
- 1 tsp ground coriander
- 50g parsley leaves
- 50g coriander leaves
- ½ tsp baking powder
- Salt and pepper to taste
- 3 tbsp sesame seeds
- Vegetable oil

TA'AMIA

AN AUTHENTIC, HERBY AND SPICED ANCIENT DISH, EGYPT, C.1991 BCE - PRESENT

Though the precise origins of this Egyptian dish have been disputed, there is evidence that ta'amia may have existed in ancient Egypt since the 12th Dynasty. However, there is another theory that states that the dish was invented around 1,000 years ago by the Copts, an Egyptian Christian sect. The precursor to falafel, ta'amia is said to have been exported from the port of Alexandria into the Middle East where the recipe was altered and adapted. Ta'amia, like falafel, remains a popular and authentic Egyptian dish. It is made with fava beans, while falafel is made primarily from chickpeas.

METHOD

01 Soak the fava beans overnight in a bowl of water or for at least 10 hours.
02 Once soaked, remove the beans from the water and pat dry.
03 Roughly chop the onions.
04 Put the fava beans, garlic, onions, cumin, ground coriander, parsley leaves, coriander leaves, baking powder and a pinch of salt and pepper into a food processor.
05 Blend the ingredients in the food processor together until a coarse paste is formed.
06 Remove the paste from the food processor and place in a bowl.
07 Cover the bowl with cling film and place it in the fridge for at least an hour.
08 After an hour, remove the bowl from the fridge and, using your hands, ball the mixture into small spheres.
09 Roll each ball in sesame seeds to coat the outside of the ta'amia.
10 Put the vegetable oil into a deep pan and heat.
11 Once the oil is hot, carefully place the balls into the pan to fry for around 5 minutes.
12 Fry until the balls are golden brown and crispy, then remove them and place them on paper towels to absorb the excess oil.
13 Serve the ta'amia with a yoghurt dip and pita.

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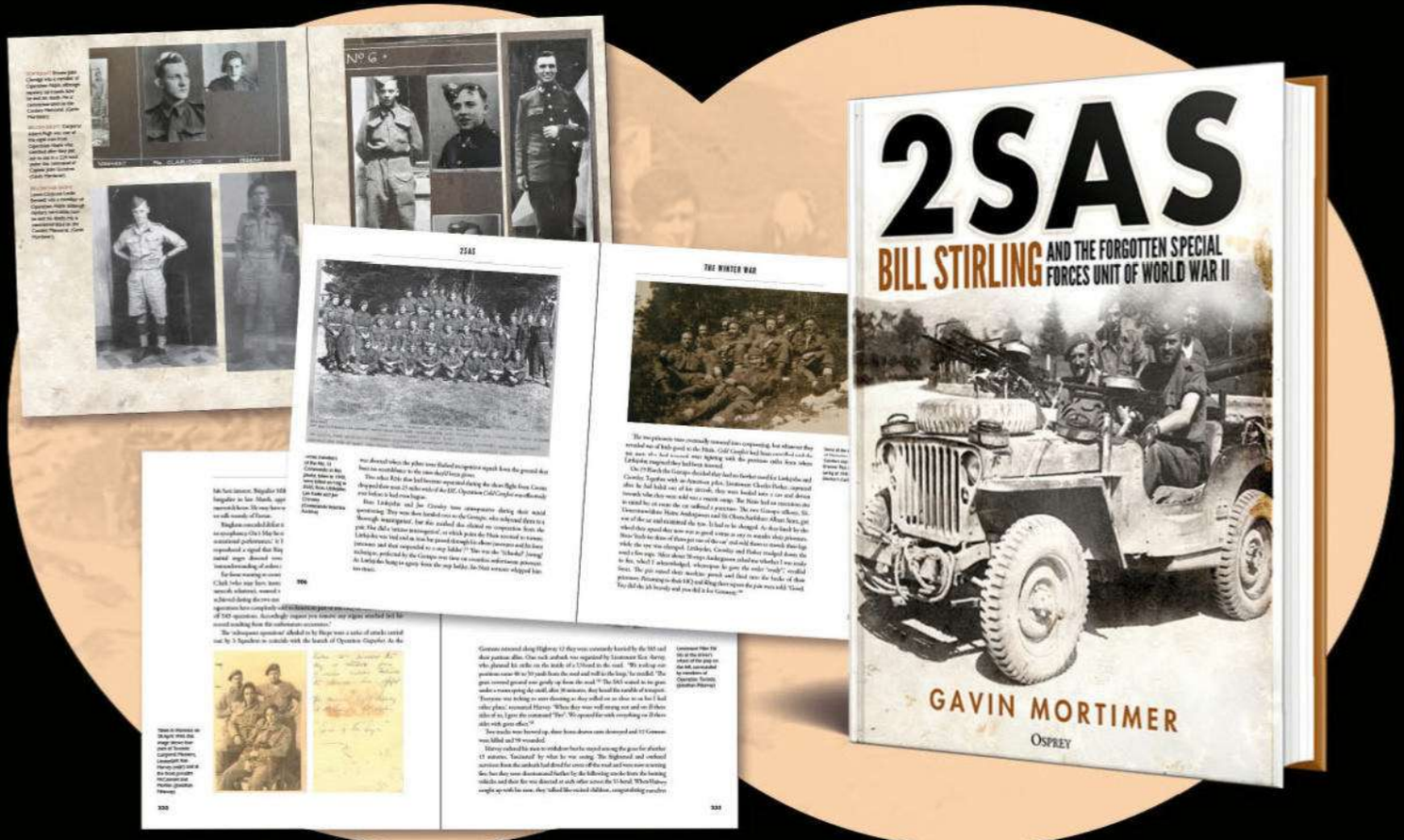
GAVIN MORTIMER

2SAS

BILL STIRLING AND THE FORGOTTEN SPECIAL FORCES UNIT OF WORLD WAR II



2SAS is a compelling tribute to the men of this special forces unit, their remarkable achievements and the man who made it all possible – Bill Stirling.

This is a tale of courage and determination in the face of an unforgiving enemy.

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